AAVID
THERMALLOY

EXTRUSION SELECTION GUIDE

WWW.AAVIDTHERMALLOY.COM

OUR MISSION

Aavid Thermalloy will lead the electronics thermal management industry worldwide. We will be the first company customers call to enable their thermal designs anywhere in the world. We will respond with extraordinary speed and will provide them with timely and cost effective solutions because we understand their needs, their industry, and their culture.

About Aavid Thermalloy LLC

Aavid Thermalloy, LLC, a subsidiary of Aavid Thermal Technologies, Inc., is the world's leading provider of thermal management solutions. Founded in 1964 as Aavid Engineering, Aavid quickly established a reputation for excellence and in 1999 acquired Thermalloy, Inc. Today Aavid Thermalloy is the oldest and largest business devoted exclusively to thermal management of electronic systems. We have built an impressive track record by deploying world class engineering resources that work directly with our customers to remove damaging heat from electronic equipment.

Aavid Thermalloy is the partner of choice for electronics companies focused on introducing next generation products to market faster, with greater reliability, and increased functionality. Leading the way with the industry's broadest line of standard products, Aavid Thermalloy is the most recognized heat sink manufacturer in the world. Our design capabilities extend beyond standard products and use the most advanced thermal engineering resources available to design application specific products. Aavid Thermalloy solutions cool critical electronic components in computers, transportation, communications infrastructure, power supplies, motor controls, power conversion equipment, and more.

From our headquarters located in Concord, New Hampshire and locations around the globe, we develop and market innovative approaches to overcome the thermal challenges facing equipment designers in North America, Europe, and Asia. Our design resources and investment in advanced manufacturing technologies have positioned Aavid Thermalloy as *The Total Integrated Solution for Cooling Electronics.®*

Global Customer Service

Anticipate and meet customer needs with the highest quality products and services in a timely and cost effective manner

World Wide Sales and Distribution

Support product development cycles with dedicated sales engineering resources and distribution partners that deliver on time, anywhere in the world

Design Services

Guide our customers through thermal design issues at all stages of product development from concept to production with solutions that provide competitive advantage

World Class Manufacturing

Deliver innovative, quality products to market cost effectively using global resources and a broad portfolio of manufacturing processes and capabilities

Global Logistics Support

Integrate seamlessly into our customers supply chain by leveraging our global footprint to supply product quickly

Quality Systems Management

Pursue an approach to quality and reliability that is reinforced by a system promoting continuous improvement as part of our core culture, ISO 9001:2000 certified

Technical Capabilities

Skilled Aavid engineers are available in every worldwide location to assist in selecting a heat dissapator to meet your thermal and configuration needs Aavid engineers are available and willing to assist in the following areas: front end design selection, prototypes, design modifications, accessory, and option selection. Our technical support system will support the customer throughout their entire development cycle; including prototype, product concept, design and production.

Aavid Thermalloy

THE WIDEST SELECTION OF EXTRUDED HEAT SINK SHAPES IN THE INDUSTRY

Why choose Aavid Thermalloy as your extrusion supplier?

- Aavid Thermalloy has over 5,000 extrusion dies available for use. Chances are very good that we have a shape that will suit your needs. Our easy to use "Extrusion Search Tool" on our Web Site at **www.aavidthermalloy.com**, will guide you in choosing from our most popular shapes.
- At Aavid Thermalloy, we have built a singular source, under one name, for all your thermal management needs. We dedicate our varied resources to provide you with the optimum cooling solution in the fastest possible time. Establishing an alliance with Aavid Thermalloy at the start of your project will bring this full spectrum of capabilities to your design team.
- We have manufacturing locations throughout Europe, Asia and North America totaling over 600,000 square feet of manufacturing space. Using our global footprint, we can deliver product where you need it, anywhere in the world. Every one of our manufacturing facilities has the ability to produce any level of extrusion design, regardless of complexity.

The Extrusion Process

- Ideally, working with an existing shape (Aavid Thermalloy has over 5,000 dies available.) is the least expensive option. However, if a custom shape is required, an extrusion die must be produced. Prices for a new die range between $1,000 and $3,000 for most dies that fall within a 7-inch circle size. Prices vary for dies greater than a 7-inch circle size based on size and complexity.
- An aluminum billet (a round log of aluminum heated to about 900° F) is pushed through the "tool stack" to form the net shape. The tool stack normally involves:
    1. a feeder plate to form the billet into a rough geometry of the net shape
    2. the extrusion die which forms the net shape
    3. a backer and/or bolster plate to support the die plate
- Extrusion is pushed in 20 to 100 ft lengths, straightened and stretched. It is then cut to a length to suit the users needs. Aavid Thermalloy normally stocks product in 8 ft sections, however custom lengths are widely used. Consideration of the final cut length of the finished product is taken into account when determining "stick" length to maximize the yield.
- There is normally an industry standard minimum number of pounds involved in a typical "push" of extrusion. These minimums will range from about 500 pounds to 2,500 pounds based on the shape, size and weight of the part. Aavid Thermalloy offers a variety of our most popular shapes (labeled "A" class and "B" class) at significantly smaller order minimums than the industry standard. We can do this because we have multiple users of the same net shapes. In many instances we will have the more popular extrusions in stock and ready for immediate delivery or use in fabricating your end product. We have our on hand inventory as well as the class listed on our web site, **www.aavidthermalloy.com**, for your convenience in choosing your desired material.

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Aavid Thermalloy, LLC RoHS Compliant Product Availability

Complete details on the Aavid Thermalloy RoHS program, including a parts listing, are available on the main page of its website: **www.aavidthermalloy.com**. In addition, each individual part data sheet has been updated to readily identify those products that are currently RoHS compliant as well as those that will become compliant in the near future. The Aavid Thermalloy RoHS specification and company statement regarding the program are also available to view or download.

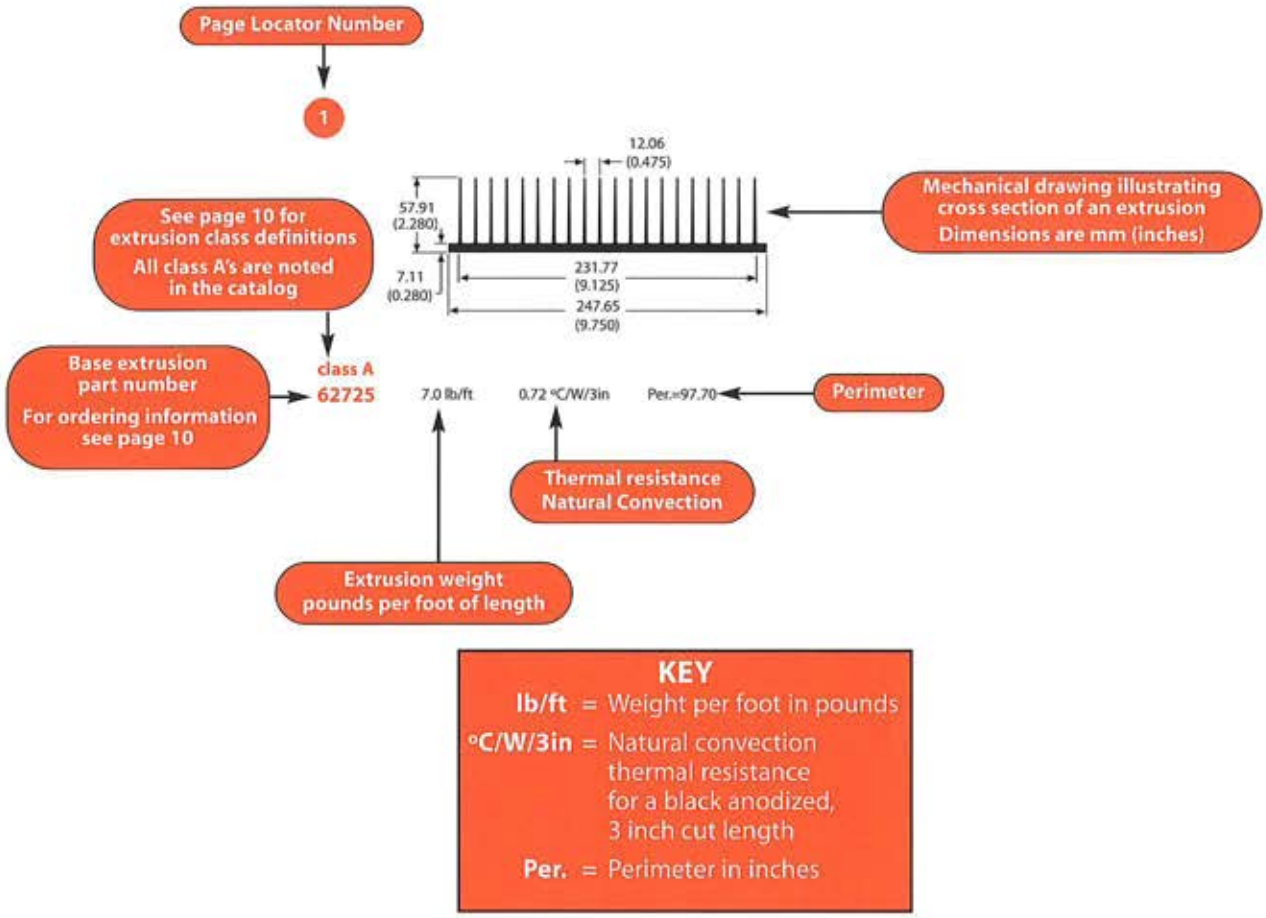
Aavid Thermalloy, LLC maintains its commitment to customers to achieve full compliance prior to the July 1, 2006 deadline. As we work towards this goal, the website will be updated regularly with new compliant products.

AAVID THERMALLOY
www.aavidthermalloy.com

AMERICA
USA Tel: +1 (603) 224-9988 email: info@aavid.com

EUROPE
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com

ASIA
Singapore Tel: +65 6362 8388 email: sales@aavid.com.sg
Taiwan Tel: +886(2) 2698-9888 email: sales@aavid.com.tw



Thermal Resistance...What does it mean?

Thermal resistance is a value that defines the relative performance efficiency of a heat sink in terms of a temperature differential with respect to the power dissipated of °C/W. In other words, the lower the thermal resistance, the better the performance. Since thermal performance is related to the total surface area (especially in natural convection), the lower the thermal resistance, the larger the heat sink.

°C/W/3in...What is this term?

It is a relative performance measurement used for comparing and sizing extruded heat sinks. It allows a simplified value to make general comparisons between different shapes. Also, since extrusion performance is determined by the cut length, the generally accepted convention is to use a 3.00" (76.2mm) cut length for comparison.

Some qualifiers to consider when using this term:

- It is based on a point source heat load. It assumes that there are some conductive losses in the part. If there are multiple heat sources or fully uniform heat loading, expect improved performance up to 20%.
- It is a natural convection only value. Any external air movement will improve performance.
- It is based on a 75°C temp. differential. Please refer to the temperature correction table on page 16.
- It is based on a 3.00" cut length. Please refer to the length correction table on page 16 for other lengths.
- It is based on a black anodized finish. This is preferred for natural convection heat sinks. Expect a double digit percentage increase in thermal resistance if a plain finish is used.
- It is based on the heat sink oriented in the optimal position. In natural convection, performance is very dependent on the ease of air movement through the heat sink. Positioning the heat sink in other orientations can DOUBLE the thermal resistance.

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60065	48	4	4.750	1.875	1.98
60070	52	3	2.000	0.562	6.96
60080	52	6	4.125	1.000	2.91
60095	34	20	4.125	1.750	1.90
60105	52	11	4.750	4.500	1.02
60110	44	14	3.687	0.562	4.79
60130	24	2	1.375	0.500	9.85
60140	38	6	6.080	1.750	1.39
60150	52	4	3.960	1.600	2.46
60180	53	3	1.750	2.250	2.94
60185	43	3	1.500	0.350	13.76
60215	37	9	5.561	1.312	1.68
60230	37	16	5.886	1.250	1.77
60245	48	2	4.750	1.250	2.11
60250	34	2	3.450	1.290	2.43
60255	52	7	4.000	4.000	1.09
60260	52	13	5.000	5.000	0.84
60265	52	15	6.250	6.250	0.67
60280	48	1	4.625	1.500	1.99
60340	38	12	6.437	1.312	1.28
60350	45	16	4.500	1.400	2.17
60355	47	14	4.000	2.060	2.31
60365	28	18	1.750	1.750	4.51
60395	45	4	3.937	0.750	3.54
60410	48	15	7.500	1.375	1.51
60440	46	14	6.000	1.187	2.18
60450	47	8	3.350	0.906	2.78
60455	47	9	3.359	2.000	2.03
60485	34	10	3.687	1.250	2.56
60490	32	2	2.562	0.375	5.19
60500	47	11	3.937	1.875	2.05
60520	41	8	9.875	1.312	0.90
60525	52	20	1.650	1.200	5.85
60540	51	1	5.000	2.250	1.24
60555	44	13	3.622	0.400	5.61
60560	35	7	4.375	1.290	1.91
60565	48	12	4.812	2.468	1.30
60570	44	17	3.750	1.335	2.62
60585	35	16	4.562	0.750	2.15
60595	29	7	1.875	1.000	4.30
60625	44	5	3.088	1.700	3.12
60630	45	2	3.900	1.281	2.29
60645	47	12	4.000	1.250	2.28
60650	52	10	4.751	3.000	1.14
60655	51	10	7.000	3.125	0.85
60660	34	15	4.000	1.188	2.22
60665	45	7	4.000	0.687	3.48
60725	44	15	3.688	0.562	3.14
60730	51	6	6.250	2.000	1.37
60755	47	16	4.000	2.625	1.51
60760	33	11	3.250	1.000	3.11
60765	33	13	3.250	1.500	2.35
60770	33	15	3.250	2.000	2.23
60780	48	7	4.750	2.625	1.61
60805	45	15	4.500	1.000	2.53
60815	40	11	8.350	2.000	1.22
60830	47	15	4.000	2.250	1.96
60835	47	18	4.50	2.500	1.54
60840	46	4	4.812	1.312	2.12
60845	46	7	5.312	0.875	3.58
60850	44	18	3.812	0.750	4.80
60865	44	2	2.687	0.687	5.71
60900	46	18	6.500	1.600	1.51
60905	45	12	4.000	1.400	2.22
60910	39	18	7.688	0.630	2.58
60925	53	9	5.625	1.875	2.31
60935	44	16	3.750	1.000	2.68
60950	43	5	1.750	0.500	8.70
60955	32	12	2.682	0.400	5.87
60970	46	12	5.886	0.815	2.77
60975	30	18	2.276	0.678	4.95
60985	43	17	2.440	0.720	5.99
60995	46	20	6.750	1.185	1.50
61015	52	17	9.250	6.750	0.60
61030	45	9	4.000	1.000	2.90
61035	44	9	3.250	0.935	3.19
61040	44	4	2.810	0.935	3.86
61050	45	3	3.920	1.688	2.87
61055	44	11	3.436	1.400	2.73
61060	44	10	3.270	1.281	2.84
61065	44	1	2.660	1.281	3.78
61070	38	14	6.500	1.600	1.30
61075	35	9	4.500	1.400	1.90
61080	28	7	1.560	0.750	5.79
61085	37	4	5.375	1.312	1.52
61090	34	19	4.125	1.312	1.93
61140	47	10	3.600	1.125	2.76
61150	49	18	1.250	2.500	4.35
61155	42	11	12.250	1.000	0.94
61175	52	9	4.250	4.300	1.25
61215	28	10	1.630	1.290	4.54
61230	46	19	6.750	0.734	2.11
61270	52	8	4.000	4.000	1.13
61285	50	15	4.562	0.500	3.31
61290	34	18	4.125	1.000	3.11
61310	51	7	6.250	2.000	1.37
61315	33	9	3.120	1.250	2.85
61325	50	10	2.260	1.380	4.96
61340	47	3	7.000	1.250	1.61
61350	53	12	6.375	2.862	1.19
61390	44	3	2.800	1.330	3.27
61420	43	9	2.000	0.375	6.83
61435	53	1	1.750	1.800	3.95
61445	45	6	4.000	0.687	4.13
61455	44	7	3.140	1.312	3.04
61460	30	15	2.250	1.250	3.96
61475	46	17	6.500	1.600	1.51
61485	50	14	4.543	1.220	2.58
61520	25	6	0.810	0.450	16.77
61540	51	13	9.800	2.900	0.65
61555	32	4	2.562	0.850	5.07
61565	24	7	0.250	0.190	40.42
61570	51	9	7.000	3.125	0.81
61585	34	14	4.000	0.300	3.47
61590	50	9	1.830	0.562	9.37
61605	27	17	1.400	1.500	5.47
61610	25	2	0.731	0.190	20.81
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61665	47	6	9.500	1.218	1.53
61680	32	7	2.600	1.000	5.03
61690	46	15	6.100	1.600	1.64
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61715	46	16	6.500	1.600	1.62
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61785	42	1	10.780	3.770	0.79
61790	37	10	5.750	0.687	3.00
61820	53	15	2.280	3.260	1.94
61830	39	5	6.900	1.540	1.42
61850	45	1	3.882	1.312	2.19
61875	50	13	2.750	1.500	4.25
61880	40	2	7.720	1.350	1.13
61895	32	14	2.800	1.250	2.94
61915	39	12	7.340	0.875	1.48
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61945	24	14	0.530	0.190	27.86
61960	52	19	2.000	2.120	2.00
61965	50	20	5.000	2.250	1.23
61980	37	2	5.180	1.350	1.60
61995	25	3	0.744	0.240	14.24
62000	24	15	0.530	0.400	15.30
62030	47	7	9.870	1.310	1.05
62035	27	2	1.250	0.580	8.22
62060	38	20	6.750	1.630	1.23
62100	51	18	6.000	6.875	0.47
62155	38	18	6.646	1.312	1.26
62160	48	16	7.990	1.060	1.01
62165	52	18	2.200	1.750	3.40
62180	32	13	2.682	0.406	5.95
62185	41	7	9.850	2.000	1.18
62190	51	2	5.000	2.250	1.42
62200	34	4	3.500	0.850	2.80
62215	43	12	2.120	1.500	4.09
62220	43	15	2.375	0.935	4.94
62230	26	11	1.150	1.300	5.26
62280	39	15	7.360	0.690	2.06
62285	38	19	6.750	1.630	1.23
62290	50	16	4.000	1.750	2.20
62310	48	10	4.760	2.500	1.55
62325	41	17	10.500	1.625	0.82
62335	42	19	19.000	1.312	0.44
62350	34	12	3.693	0.687	4.49
62355	43	10	2.075	1.315	5.10
62365	43	1	1.150	0.460	11.01
62375	51	17	4.921	5.374	0.76
62380	25	5	0.750	0.775	14.42
62410	46	10	5.640	2.000	1.38
62440	38	2	6.000	1.000	1.76
62460	46	9	5.640	1.000	2.25
62470	24	1	0.640	0.640	12.64
62475	45	10	4.000	1.250	2.46
62480	50	2	2.215	2.620	3.04
62495	47	4	8.500	1.500	1.13
62500	31	1	2.310	1.500	3.04
62510	39	8	7.062	1.062	1.60
62560	26	1	1.000	1.250	6.70
62580	22	17	3.520	2.705	1.53
62600	32	15	2.872	1.312	2.70
62620	36	15	5.000	0.467	3.89
62625	23	14	7.200	2.390	0.89
62645	42	14	13.680	1.000	0.97
62650	34	8	3.650	0.399	3.66
62655	36	11	4.870	1.312	1.68
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62745	29	10	1.920	1.250	3.88
62750	25	1	0.731	0.120	28.66
62780	51	4	5.906	2.411	0.96
62805	40	8	8.034	0.575	2.28
62815	29	11	1.935	1.312	3.91
62875	33	14	3.250	2.000	2.41
62890	36	10	4.800	1.340	2.14
62905	51	15	4.921	5.315	0.77
62925	26	3	1.060	0.450	13.37
62935	29	17	2.032	0.800	5.70
62995	38	1	6.000	0.350	3.34
63005	49	16	2.100	1.250	3.93
63010	49	17	2.300	1.250	3.73
63020	22	11	2.996	2.000	1.90
63045	26	12	1.180	0.370	9.00
63060	45	14	4.436	1.375	2.54
63075	24	6	1.690	0.748	6.55
63115	34	17	4.056	0.880	2.76
63120	30	1	2.063	1.020	3.46
63130	24	3	1.650	1.000	5.54
63135	30	7	2.125	1.750	2.82
63140	48	11	4.770	2.000	1.71
63155	53	10	7.578	3.125	0.97
63215	50	11	2.5	1.000	6.00
63240	25	16	0.985	0.640	9.86
63250	50	5	4.120	2.900	2.01
63265	50	1	1.450	2.000	5.17
63275	45	13	4.140	1.400	2.21
63300	26	19	1.230	0.300	15.13
63340	42	18	17.000	1.312	0.49
63350	39	17	7.625	0.575	2.38
63380	50	6	1.400	0.900	9.19
63400	26	4	1.060	0.750	8.19
63455	26	15	1.187	0.260	13.85
63480	28	6	1.525	0.280	8.23

AAVID THERMALLOY
www.aavidthermalloy.com

AMERICA
USA Tel: +1 (603) 224-9988 email: info@aavid.com

EUROPE
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com

ASIA
Singapore Tel: +65 6362 8388 email: sales@aavid.com.sg
Taiwan Tel: +886(2) 2698-9888 email: sales@aavid.com.tw

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63565	37	3	5.250	1.200	1.89
63725	44	20	3.880	0.700	5.31
63730	22	12	2.996	2.250	1.88
63745	40	4	7.875	1.281	1.13
63840	24	19	0.690	0.880	12.14
63880	52	2	7.500	2.850	0.78
63885	51	11	7.500	2.850	0.70
63925	40	5	7.875	1.312	1.05
64160	52	14	5.250	3.159	1.69
64225	38	8	6.120	2.000	1.64
64245	47	13	4.000	1.281	2.13
64285	49	15	1.750	1.600	5.08
64300	50	8	1.880	0.500	9.05
64315	37	6	5.500	2.000	1.25
64350	26	10	1.120	0.600	7.69
64360	38	11	6.420	1.210	1.24
64375	48	13	5.120	1.250	1.71
64500	37	17	5.900	1.062	1.33
64635	29	4	1.846	0.643	4.67
64640	24	18	0.662	0.400	18.07
64660	29	3	1.843	0.800	5.73
64675	25	14	0.950	0.935	7.40
64690	30	14	2.250	0.810	3.97
64730	52	1	7.000	3.450	0.75
64795	36	7	4.702	2.312	1.64
64800	33	5	3.000	1.500	2.72
64835	44	8	3.140	1.312	3.04
64855	35	2	4.150	0.750	3.35
64870	34	9	3.687	0.562	2.49
65035	32	3	2.562	0.500	5.16
65060	28	17	1.750	0.250	6.65
65130	53	11	8.080	4.440	1.06
65245	27	4	1.260	1.650	4.43
65250	29	18	2.050	0.750	4.53
65295	50	12	2.600	0.690	6.40
65325	37	8	5.560	0.700	3.21
65330	35	8	4.500	0.710	2.66
65340	42	3	11.000	2.300	0.63
65350	36	8	4.750	0.500	3.50
65440	40	16	9.000	1.800	0.87
65445	39	13	7.340	1.312	1.12
65490	31	15	2.440	1.200	3.32
65515	40	14	8.656	1.462	1.18
65525	41	13	10.328	2.369	0.64
65535	42	10	12.203	2.885	0.60
65550	31	11	2.400	0.920	4.06
65555	46	1	4.600	0.920	2.08
65605	23	13	6.961	2.790	0.71
65615	40	17	9.031	2.594	0.67
65695	44	12	3.500	1.620	3.03
65715	25	15	0.985	0.390	15.23
65795	31	9	2.400	0.720	4.32
65930	53	16	2.000	2.000	2.96
65990	45	18	4.600	0.720	2.24
66000	31	6	2.400	0.420	6.33
66330	50	7	1.550	1.150	7.65
66340	48	14	7.220	0.960	1.47
66365	28	3	1.500	0.630	5.41
66385	31	7	2.400	0.515	6.47
66435	43	11	2.100	0.540	4.78
66450	27	15	1.400	0.650	5.98
66460	27	16	1.400	0.900	6.30
66470	53	5	1.700	2.430	3.00
66480	41	1	9.400	2.000	0.93
66635	46	3	4.812	1.312	2.49
66675	32	17	2.990	0.660	3.06
66690	38	9	6.200	0.650	1.85
66730	30	9	2.200	0.320	8.38
66880	39	14	7.340	1.330	1.18
66975	51	16	4.921	5.330	0.69
67075	48	9	4.750	2.625	1.56
67170	50	19	5.000	2.250	1.29
67260	33	2	3.000	0.450	5.33
67360	53	6	2.322	2.250	3.59
67490	36	18	5.000	1.750	1.57
67590	34	1	3.450	1.230	1.58
67605	25	13	0.945	0.592	8.74
67620	28	12	1.660	0.390	9.14
67655	33	6	3.040	1.200	2.21
67835	32	6	2.600	0.950	4.45
67870	45	17	4.500	1.580	3.37
67895	36	16	5.000	0.490	2.38
68020	53	13	9.420	2.870	1.37
68145	32	8	2.634	0.285	5.65
68255	49	14	1.000	1.440	7.13
68260	25	11	0.930	0.250	13.64
68265	24	12	0.437	0.250	29.13
68295	41	4	9.730	0.565	1.23
68360	51	3	5.000	2.500	1.28
68780	39	11	7.321	1.500	1.33
68830	46	6	5.120	0.710	2.52
68855	39	10	7.201	0.460	1.51
68995	38	3	6.000	1.312	1.41
69065	24	10	0.400	0.240	25.23
69180	38	15	6.500	2.165	1.07
69200	42	6	11.750	2.875	0.56
69545	48	18	9.870	2.320	0.51
69620	53	8	4.702	3.312	1.50
69695	41	14	10.433	1.615	0.98
69755	28	13	1.660	1.175	3.60
69800	38	17	6.625	1.781	0.94
69945	36	2	4.600	0.920	1.78
69960	42	12	12.600	2.321	0.55
70035	26	8	1.100	0.350	11.19
70165	42	8	12.000	1.780	0.61
70195	35	15	4.560	1.430	1.58
70400	40	10	8.320	2.000	1.22
70440	35	17	4.573	1.875	1.54
70455	47	5	8.910	0.530	2.24
70665	35	13	4.560	0.270	4.27
70675	31	4	2.360	0.970	3.70
70680	35	14	4.560	0.472	3.07
70685	31	3	2.360	0.270	8.60
70690	31	5	2.360	1.430	3.15
70920	24	11	0.400	0.400	20.43
70945	32	10	2.675	0.750	3.59
70970	36	6	4.650	2.110	1.38
71000	41	3	9.508	0.437	2.52
71115	45	8	4.000	0.700	2.09
71145	38	7	6.080	2.250	1.00
71150	37	13	5.815	1.150	1.81
71170	37	12	5.750	2.750	1.44
71235	40	7	8.000	1.125	1.48
71350	37	14	5.860	2.000	1.19
71390	40	12	8.500	1.400	1.20
71395	38	16	6.624	1.281	1.21
71770	42	16	14.500	1.062	0.75
71845	37	15	5.860	3.150	1.07
72085	35	18	4.600	0.570	2.20
72090	36	4	4.600	1.395	1.25
72095	22	6	2.600	2.190	1.57
72145	35	3	4.179	2.000	1.70
72185	50	4	2.500	3.500	1.52
72225	42	13	12.750	1.350	0.69
72330	25	7	0.843	0.354	13.94
72355	42	4	11.220	2.400	0.54
72385	38	4	6.000	1.600	1.13
72400	32	11	2.675	1.070	3.04
72425	43	18	2.480	0.380	5.52
72480	40	6	8.000	0.680	2.33
72505	27	1	1.250	0.580	7.63
72545	42	17	14.750	2.750	0.48
72695	42	20	1.055	0.417	11.30
72785	34	5	3.530	0.400	5.18
72845	28	8	1.580	0.450	5.86
72930	29	15	2.000	1.000	4.16
73110	53	18	7.480	5.280	0.50
73115	21	10	2.050	1.298	2.72
73265	41	9	9.880	0.650	1.36
73925	22	9	2.884	1.000	1.45
73980	34	3	3.460	1.280	1.59
74155	36	3	4.600	1.150	1.61
74200	27	6	1.300	0.200	17.95
74365	46	2	4.650	1.288	1.57
74385	21	4	1.755	1.450	2.82
74415	32	19	2.995	0.880	2.29
74455	30	10	2.220	0.880	2.84
74535	23	3	4.600	0.787	1.55
74645	38	5	6.026	0.700	1.98
74765	35	5	4.235	1.025	1.38
74785	22	1	2.400	1.645	1.79
74810	21	11	2.079	0.984	3.16
74815	30	2	2.077	0.197	9.61
74860	23	12	6.930	2.065	0.88
74910	24	13	0.525	0.300	19.69
74925	23	5	4.790	1.770	0.82
74930	25	8	0.850	0.235	24.19
74970	51	5	6.140	1.950	1.24
75100	26	5	1.095	1.350	6.21
75440	27	12	1.378	0.275	10.52
75450	27	13	1.378	1.100	4.31
75560	38	13	6.496	2.815	0.83
75625	30	13	2.250	0.750	3.67
75700	46	13	5.900	1.337	1.56
75720	34	7	3.600	0.570	2.60
75790	26	2	1.029	0.600	8.56
75890	42	2	10.820	1.750	0.74
75925	29	2	1.820	0.600	5.97
75985	32	5	2.598	1.312	3.31
76125	41	18	10.695	1.625	0.86
76135	26	18	1.213	1.069	4.85
76370	23	17	8.540	2.750	0.61
76375	23	18	11.140	3.600	0.45
76525	41	5	9.750	1.800	0.90
76535	39	1	6.800	1.230	1.53
76550	29	6	1.860	1.250	4.36
76560	23	15	7.230	2.822	0.76
76620	34	16	4.000	1.250	2.06
76625	45	5	3.960	0.565	3.21
76670	30	17	2.260	0.770	3.46
76750	26	17	1.200	0.750	5.95
76755	37	11	5.750	1.600	1.09
76830	27	14	1.378	1.433	3.85
76960	48	17	9.393	0.892	1.24
77015	33	7	3.062	1.250	2.67
77170	32	20	3.000	0.250	6.60
77175	36	12	4.900	1.062	1.55
77290	35	11	4.500	2.000	1.54
77335	40	19	9.355	3.495	0.66
77370	36	1	4.600	0.700	1.96
77495	50	17	5.000	1.155	2.20
77555	39	2	6.800	2.120	0.91
77810	41	11	10.125	1.312	0.85
77870	33	4	3.000	0.625	4.35
77915	35	10	4.500	1.920	1.67
77920	37	5	5.380	1.520	1.58
78010	49	10	1.339	2.953	1.89
78020	49	4	1.181	1.850	4.72
78030	49	13	2.895	2.362	1.76
78060	49	3	1.181	1.772	4.17
78065	48	19	0.764	1.102	6.93
78070	49	11	1.575	2.953	2.25
78075	49	8	1.495	2.126	3.03
78080	49	7	1.063	2.362	2.94
78220	49	9	1.181	2.362	3.65
78240	48	20	0.866	1.378	5.51
78245	49	5	1.062	2.362	2.97
78255	49	1	1.063	1.063	11.48
78265	49	2	0.866	1.122	8.72
78345	49	12	2.677	1.535	2.63
78440	23	4	4.600	1.770	0.84
78450	43	14	2.360	0.970	4.32
78550	31	18	2.500	0.950	4.21
78570	36	19	5.060	0.230	4.93
78580	34	6	3.600	0.225	5.36
78585	22	3	2.440	1.400	2.16
78590	31	12	2.400	0.950	3.23

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Part #	Page #	Locator #	Width	Height	θn
78610	53	2	1.750	2.250	2.91
78670	31	2	2.322	1.400	2.75
78715	41	12	10.156	1.876	0.69
78735	30	19	2.280	0.950	3.26
78770	50	3	1.322	3.300	4.16
78780	35	1	4.125	1.750	1.90
78830	30	11	2.233	0.630	3.17
78875	33	3	3.000	0.475	3.82
78915	24	4	1.650	1.000	5.09
78950	46	5	5.000	1.500	1.76
79000	22	7	2.620	2.700	1.59
79010	22	2	2.400	2.020	1.82
79025	36	9	4.800	0.950	2.15
79075	48	5	4.750	2.000	1.73
79190	39	4	6.890	0.984	1.85
79200	27	7	1.300	0.490	8.05
79240	52	16	6.250	6.250	0.65
79255	31	16	2.496	0.450	6.18
79265	24	20	0.715	0.400	13.15
79290	22	10	2.952	2.380	1.19
79300	26	6	1.100	0.195	13.19
79360	49	6	1.181	2.204	3.98
79430	31	17	2.500	0.520	3.98
79435	23	10	6.750	1.781	0.81
79455	47	2	6.800	1.402	1.21
79820	30	12	2.250	0.740	4.35
79840	21	6	1.923	0.964	2.14
79920	28	14	1.700	0.350	8.38
79925	28	5	1.500	0.650	5.98
79930	28	20	1.800	0.275	9.51
79940	28	1	1.500	0.400	8.63
79945	31	10	2.400	0.750	3.68
79955	28	19	1.771	0.246	7.59
79975	33	8	3.062	1.312	2.70
79980	34	13	3.930	0.590	3.18
79985	28	4	1.500	0.650	5.76
80060	29	9	1.900	0.650	4.96
80070	25	9	0.850	0.520	11.62
80120	30	5	2.100	0.650	4.31
80170	43	8	1.938	0.935	6.92
80190	28	16	1.710	0.101	16.96
80220	28	15	1.700	0.650	5.07
80225	29	1	1.800	0.650	5.03
80235	25	10	0.850	1.000	8.54
80245	26	9	1.100	0.600	8.46
80250	27	11	1.358	0.650	6.61
80265	36	5	4.610	0.520	2.81
80325	32	1	2.500	1.400	3.48
80345	42	7	11.969	1.578	0.78
80350	35	4	4.220	1.200	1.35
80380	21	5	1.845	1.254	3.81
80400	47	17	4.500	1.032	3.13
80420	26	16	1.200	0.615	7.49
80430	28	2	1.500	0.615	6.01
80445	27	9	1.358	0.615	6.61
80455	24	8	0.375	0.190	27.50
80505	43	4	1.700	0.500	8.74
80510	40	15	9.000	1.312	0.98
80575	40	20	9.380	1.310	0.90
80580	40	9	8.100	1.310	0.90
80595	27	10	1.358	0.650	6.38
80600	26	14	1.185	0.500	7.73
80605	42	5	11.560	1.130	0.81
80615	30	16	2.260	0.300	5.34
80630	32	16	2.900	1.312	2.71
80640	36	17	5.000	1.550	1.27
80645	35	12	4.500	2.020	1.23
80655	32	18	2.990	0.676	3.12
80670	30	4	2.100	0.400	5.44
80675	35	6	4.254	0.575	3.35
80695	33	12	3.250	1.500	2.35
80700	27	3	1.250	0.920	6.31
80710	37	18	6.000	0.285	2.74
80715	40	13	8.600	0.667	1.57
80720	27	5	1.299	0.591	6.81
80725	43	2	1.464	0.296	10.55
80765	25	18	1.000	1.000	7.61
80815	39	16	7.434	0.875	1.50
80825	30	3	2.099	1.750	3.16
80965	36	13	4.900	1.680	2.61
81055	39	6	7.000	0.465	2.18
81060	44	6	3.140	1.312	2.90
81065	27	18	1.500	0.200	12.58
81085	30	8	2.158	0.433	5.21
81130	27	8	1.300	0.650	7.31
81190	21	2	1.575	1.630	2.60
81245	41	15	10.500	1.130	0.84
81255	53	7	2.800	2.250	1.72
81275	33	1	3.000	0.394	3.49
81295	29	8	1.900	0.400	7.12
81300	26	7	1.100	0.300	8.61
81395	24	17	0.591	0.295	24.85
81405	25	17	1.000	0.195	17.98
81410	40	3	7.875	0.687	2.05
81480	38	10	6.300	1.310	1.30
81520	39	3	6.850	1.000	2.55
81525	33	18	3.450	0.875	2.31
81640	42	9	12.000	1.810	0.58
81655	51	12	7.870	2.850	0.70
81760	46	8	5.600	1.035	2.02
81850	33	16	3.386	0.900	3.08
81855	33	17	3.386	1.400	2.68
81870	22	15	3.160	1.210	1.59
81880	46	11	5.859	1.347	1.03
81895	31	13	2.400	0.950	3.24
81905	43	16	2.400	0.450	4.71
81910	31	14	2.400	1.400	2.74
81915	30	20	2.280	1.400	2.77
81920	43	13	2.280	0.450	4.75
81940	33	10	3.190	2.000	1.92
81955	51	8	7.000	3.000	0.94
81965	32	9	2.660	0.350	5.48
81985	51	14	13.000	4.040	0.46
82030	23	6	4.850	1.750	0.87
82055	34	11	3.691	0.687	4.51
82070	23	1	3.750	3.020	0.84
82160	23	16	8.083	2.505	0.48
82165	21	1	1.575	0.900	2.88
82200	44	19	3.831	1.000	2.57
82260	23	8	5.200	2.280	0.78
82265	40	18	9.310	1.060	1.22
82290	24	9	0.384	0.250	30.53
82350	45	11	4.000	1.250	2.52
82360	29	5	1.850	0.750	3.62
82375	41	16	10.500	1.170	1.21
82395	23	9	5.800	2.790	0.85
82420	28	9	1.625	1.750	4.53
82435	29	12	1.950	0.500	4.06
82440	26	20	1.250	0.500	7.85
82445	42	15	13.800	2.885	0.54
82450	26	13	1.180	0.375	8.57
82455	20	3	1.180	0.906	3.72
82460	29	14	2.000	0.385	6.64
82495	28	11	1.655	0.450	5.35
82500	25	4	0.750	0.200	16.70
82520	24	16	0.540	0.590	14.11
82525	23	7	5.000	2.917	0.83
82555	39	7	7.020	1.198	1.12
82580	43	7	1.850	0.640	6.22
82590	41	2	9.429	1.420	0.65
82595	37	7	5.510	0.360	2.43
82610	37	1	5.135	0.540	3.28
82635	29	16	2.016	0.413	7.03
82665	25	12	0.942	0.370	13.17
82675	31	8	2.400	0.650	3.80
82705	36	20	5.118	0.955	2.12
82715	29	13	1.969	0.551	5.28
82740	40	1	7.700	0.660	1.18
82755	30	6	2.110	0.383	5.42
83115	20	1	0.984	0.986	3.07
83120	20	2	1.157	0.789	3.80
83130	20	4	1.280	0.986	2.99
83135	20	5	1.301	1.915	3.08
83140	20	6	1.414	1.683	2.10
83145	20	7	1.420	1.451	2.96
83150	20	8	1.565	1.543	2.08
83155	21	3	1.650	1.252	2.11
83160	21	7	1.923	1.498	1.22
83165	21	8	1.931	1.183	2.95
83170	21	9	2.031	1.108	1.47
83175	21	12	2.083	1.323	1.89
83180	21	13	2.103	1.262	1.27
83185	21	14	2.167	0.986	2.38
83190	21	15	2.167	1.537	1.52
83195	21	16	2.318	1.002	1.91
83200	21	18	2.364	1.813	1.15
83210	21	17	2.364	1.545	1.20
83215	22	4	2.500	1.185	1.44
83220	22	5	2.581	1.340	1.01
83225	22	8	2.716	1.888	0.86
83230	22	13	3.050	1.014	1.25
83235	22	14	3.150	1.059	1.43
83240	22	16	3.502	2.683	0.73
83245	22	18	3.650	1.106	0.89
83250	23	2	3.985	1.268	0.78
83255	23	11	6.903	3.716	0.64

AAVID THERMALLOY
www.aavidthermalloy.com

AMERICA
USA Tel: +1 (603) 224-9988 email: info@aavid.com

EUROPE
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com

ASIA
Singapore Tel: +65 6362 8388 email: sales@aavid.com.sg
Taiwan Tel: +886(2) 2698-9888 email: sales@aavid.com.tw

HIGH FIN DENSITY

Part #	Page #	Locator #	Width	Height	θn
83115	20	1	0.984	0.986	3.07
83120	20	2	1.157	0.789	3.80
82455	20	3	1.180	0.906	3.72
83130	20	4	1.280	0.986	2.99
83135	20	5	1.301	1.915	3.08
83140	20	6	1.414	1.683	2.10
83145	20	7	1.420	1.451	2.96
83150	20	8	1.565	1.543	2.08
82165	21	1	1.575	0.900	2.88
81190	21	2	1.575	1.630	2.60
83155	21	3	1.650	1.252	2.11
74385	21	4	1.755	1.450	2.82
80380	21	5	1.845	1.254	3.81
79840	21	6	1.923	0.964	2.14
83160	21	7	1.923	1.498	1.22
83165	21	8	1.931	1.183	2.95
83170	21	9	2.031	1.108	1.47
73115	21	10	2.050	1.298	2.72
74810	21	11	2.079	0.984	3.16
83175	21	12	2.083	1.323	1.89
83180	21	13	2.103	1.262	1.27
83185	21	14	2.167	0.986	2.38
83190	21	15	2.167	1.537	1.52
83195	21	16	2.318	1.002	1.91
83210	21	17	2.364	1.545	1.20
83200	21	18	2.364	1.813	1.15
74785	22	1	2.400	1.645	1.79
79010	22	2	2.400	2.020	1.82
78585	22	3	2.440	1.400	2.16
83215	22	4	2.500	1.185	1.44
83220	22	5	2.581	1.340	1.01
72095	22	6	2.600	2.190	1.57
79000	22	7	2.620	2.700	1.59
83225	22	8	2.716	1.888	0.86
73925	22	9	2.884	1.000	1.45
79290	22	10	2.952	2.380	1.19
63020	22	11	2.996	2.000	1.90
63730	22	12	2.996	2.250	1.88
83230	22	13	3.050	1.014	1.25
83235	22	14	3.150	1.059	1.43
81870	22	15	3.160	1.210	1.59
83240	22	16	3.502	2.683	0.73
62580	22	17	3.520	2.705	1.53
83245	22	18	3.650	1.106	0.89
82070	23	1	3.750	3.020	0.84
83250	23	2	3.985	1.268	0.78
74535	23	3	4.600	0.787	1.55
78440	23	4	4.600	1.770	0.84
74925	23	5	4.790	1.770	0.82
82030	23	6	4.850	1.750	0.87
82525	23	7	5.000	2.917	0.83
82260	23	8	5.200	2.280	0.78
82395	23	9	5.800	2.790	0.85
79435	23	10	6.750	1.781	0.81
83255	23	11	6.903	3.716	0.64
74860	23	12	6.930	2.065	0.88
65605	23	13	6.961	2.790	0.71
62625	23	14	7.200	2.390	0.89
76560	23	15	7.230	2.822	0.76
82160	23	16	8.083	2.505	0.48
76370	23	17	8.540	2.750	0.61
76375	23	18	11.140	3.600	0.45

BOARD LEVEL W/PINS

Part #	Page #	Locator #	Width	Height	θn
62470	24	1	0.640	0.640	12.64
60130	24	2	1.375	0.500	9.85
63130	24	3	1.650	1.000	5.54
63485	24	5	1.650	1.000	5.56
78915	24	4	1.650	1.000	5.09
63075	24	6	1.690	0.748	6.55

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Part #	Page #	Locator #	Width	Height	θn
61565	24	7	0.250	0.190	40.42
80455	24	8	0.375	0.190	27.50
82290	24	9	0.384	0.250	30.53
69065	24	10	0.400	0.240	25.23
70920	24	11	0.400	0.400	20.43
68265	24	12	0.437	0.250	29.13
74910	24	13	0.525	0.300	19.69
61945	24	14	0.530	0.190	27.86
62000	24	15	0.530	0.400	15.30
82520	24	16	0.540	0.590	14.11
81395	24	17	0.591	0.295	24.85
64640	24	18	0.662	0.400	18.07
63840	24	19	0.690	0.880	12.14
79265	24	20	0.715	0.400	13.15
62750	25	1	0.731	0.120	28.66
61610	25	2	0.731	0.190	20.81
61995	25	3	0.744	0.240	14.24
82500	25	4	0.750	0.200	16.70
62380	25	5	0.750	0.775	14.42
61520	25	6	0.810	0.450	16.77
72330	25	7	0.843	0.354	13.94
74930	25	8	0.850	0.235	24.19
80070	25	9	0.850	0.520	11.62
80235	25	10	0.850	1.000	8.54
68260	25	11	0.930	0.250	13.64
82665	25	12	0.942	0.370	13.17
67605	25	13	0.945	0.592	8.74
64675	25	14	0.950	0.935	7.40
65715	25	15	0.985	0.390	15.23
63240	25	16	0.985	0.640	9.86
81405	25	17	1.000	0.195	17.98
80765	25	18	1.000	1.000	7.61
62560	26	1	1.000	1.250	6.70
75790	26	2	1.029	0.600	8.56
62925	26	3	1.060	0.450	13.37
63400	26	4	1.060	0.750	8.19
75100	26	5	1.095	1.350	6.21
79300	26	6	1.100	0.195	13.19
81300	26	7	1.100	0.300	8.61
70035	26	8	1.100	0.350	11.19
80245	26	9	1.100	0.600	8.46
64350	26	10	1.120	0.600	7.69
62230	26	11	1.150	1.300	5.26
63045	26	12	1.180	0.370	9.00
82450	26	13	1.180	0.375	8.57
80600	26	14	1.185	0.500	7.73
63455	26	15	1.187	0.260	13.85
80420	26	16	1.200	0.615	7.49
76750	26	17	1.200	0.750	5.95
76135	26	18	1.213	1.069	4.85
63300	26	19	1.230	0.300	15.13
82440	26	20	1.250	0.500	7.85
62035	27	2	1.250	0.580	8.22
72505	27	1	1.250	0.580	7.63
80700	27	3	1.250	0.920	6.31
65245	27	4	1.260	1.650	4.43
80720	27	5	1.299	0.591	6.81
74200	27	6	1.300	0.200	17.95
79200	27	7	1.300	0.490	8.05
81130	27	8	1.300	0.650	7.31
80445	27	9	1.358	0.615	6.61
80250	27	11	1.358	0.650	6.61
80595	27	10	1.358	0.650	6.38
75440	27	12	1.378	0.275	10.52
75450	27	13	1.378	1.100	4.31
76830	27	14	1.378	1.433	3.85
66450	27	15	1.400	0.650	5.98
66460	27	16	1.400	0.900	6.30
61605	27	17	1.400	1.500	5.47
81065	27	18	1.500	0.200	12.58
79940	28	1	1.500	0.400	8.63
80430	28	2	1.500	0.615	6.01
66365	28	3	1.500	0.630	5.41
79925	28	5	1.500	0.650	5.98
79985	28	4	1.500	0.650	5.76
63480	28	6	1.525	0.280	8.23
61080	28	7	1.560	0.750	5.79
72845	28	8	1.580	0.450	5.86
82420	28	9	1.625	1.750	4.53
61215	28	10	1.630	1.290	4.54
82495	28	11	1.655	0.450	5.35
67620	28	12	1.660	0.390	9.14
69755	28	13	1.660	1.175	3.60
79920	28	14	1.700	0.350	8.38
80220	28	15	1.700	0.650	5.07
80190	28	16	1.710	0.101	16.96
65060	28	17	1.750	0.250	6.65
60365	28	18	1.750	1.750	4.51
79955	28	19	1.771	0.246	7.59
79930	28	20	1.800	0.275	9.51
80225	29	1	1.800	0.650	5.03
75925	29	2	1.820	0.600	5.97
64660	29	3	1.843	0.800	5.73
64635	29	4	1.846	0.643	4.67
82360	29	5	1.850	0.750	3.62
76550	29	6	1.860	1.250	4.36
60595	29	7	1.875	1.000	4.30
81295	29	8	1.900	0.400	7.12
80060	29	9	1.900	0.650	4.96
62745	29	10	1.920	1.250	3.88
62815	29	11	1.935	1.312	3.91
82435	29	12	1.950	0.500	4.06
82715	29	13	1.969	0.551	5.28
82460	29	14	2.000	0.385	6.64
72930	29	15	2.000	1.000	4.16
82635	29	16	2.016	0.413	7.03
62935	29	17	2.032	0.800	5.70
65250	29	18	2.050	0.750	4.53
63120	30	1	2.063	1.020	3.46
74815	30	2	2.077	0.197	9.61
80825	30	3	2.099	1.750	3.16
80670	30	4	2.100	0.400	5.44
80120	30	5	2.100	0.650	4.31
82755	30	6	2.110	0.383	5.42
63135	30	7	2.125	1.750	2.82
81085	30	8	2.158	0.433	5.21
66730	30	9	2.200	0.320	8.38
74455	30	10	2.220	0.880	2.84
78830	30	11	2.233	0.630	3.17
79820	30	12	2.250	0.740	4.35
75625	30	13	2.250	0.750	3.67
64690	30	14	2.250	0.810	3.97
61460	30	15	2.250	1.250	3.96
80615	30	16	2.260	0.300	5.34
76670	30	17	2.260	0.770	3.46
60975	30	18	2.276	0.678	4.95
78735	30	19	2.280	0.950	3.26
81915	30	20	2.280	1.400	2.77
62500	31	1	2.310	1.500	3.04
78670	31	2	2.322	1.400	2.75
70685	31	3	2.360	0.270	8.60
70675	31	4	2.360	0.970	3.70
70690	31	5	2.360	1.430	3.15
66000	31	6	2.400	0.420	6.33
66385	31	7	2.400	0.515	6.47
82675	31	8	2.400	0.650	3.80
65795	31	9	2.400	0.720	4.32
79945	31	10	2.400	0.750	3.68
65550	31	11	2.400	0.920	4.06
78590	31	12	2.400	0.950	3.23
81895	31	13	2.400	0.950	3.24
81910	31	14	2.400	1.400	2.74
65490	31	15	2.440	1.200	3.32
79255	31	16	2.496	0.450	6.18
79430	31	17	2.500	0.520	3.98
78550	31	18	2.500	0.950	4.21
80325	32	1	2.500	1.400	3.48
60490	32	2	2.562	0.375	5.19
65035	32	3	2.562	0.500	5.16

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Part #	Page #	Locator #	Width	Height	θn
61555	32	4	2.562	0.850	5.07
75985	32	5	2.598	1.312	3.31
67835	32	6	2.600	0.950	4.45
61680	32	7	2.600	1.000	5.03
68145	32	8	2.634	0.285	5.65
81965	32	9	2.660	0.350	5.48
70945	32	10	2.675	0.750	3.59
72400	32	11	2.675	1.010	3.04
60955	32	12	2.682	0.400	5.87
62180	32	13	2.682	0.406	5.95
61895	32	14	2.800	1.250	2.94
62600	32	15	2.872	1.312	2.70
80630	32	16	2.900	1.312	2.71
66675	32	17	2.990	0.660	3.06
80655	32	18	2.990	0.676	3.12
74415	32	19	2.995	0.880	2.29
77170	32	20	3.000	0.250	6.60
81275	33	1	3.000	0.394	3.49
67260	33	2	3.000	0.450	5.33
78875	33	3	3.000	0.475	3.82
77870	33	4	3.000	0.625	4.35
64800	33	5	3.000	1.500	2.72
67655	33	6	3.040	1.200	2.21
77015	33	7	3.062	1.250	2.67
79975	33	8	3.062	1.312	2.70
61315	33	9	3.120	1.250	2.85
81940	33	10	3.190	2.000	1.92
60760	33	11	3.250	1.000	3.11
60765	33	13	3.250	1.500	2.35
80695	33	12	3.250	1.500	2.35
60770	33	15	3.250	2.000	2.23
62875	33	14	3.250	2.000	2.41
81850	33	16	3.386	0.900	3.08
81855	33	17	3.386	1.400	2.68
81525	33	18	3.450	0.875	2.31
67590	34	1	3.450	1.230	1.58
60250	34	2	3.450	1.290	2.43
73980	34	3	3.460	1.280	1.59
62200	34	4	3.500	0.850	2.80
72785	34	5	3.530	0.400	5.18
78580	34	6	3.600	0.225	5.36
75720	34	7	3.600	0.570	2.60
62650	34	8	3.650	0.399	3.66
64870	34	9	3.687	0.562	2.49
60485	34	10	3.687	1.250	2.56
82055	34	11	3.691	0.687	4.51
62350	34	12	3.693	0.687	4.49
79980	34	13	3.930	0.590	3.18
61585	34	14	4.000	0.300	3.47
60660	34	15	4.000	1.188	2.22
76620	34	16	4.000	1.250	2.06
63115	34	17	4.056	0.88	2.76
61290	34	18	4.125	1.000	3.11
61090	34	19	4.125	1.312	1.93
60095	34	20	4.125	1.750	1.90
78780	35	1	4.125	1.750	1.90
64855	35	2	4.150	0.750	3.35
72145	35	3	4.179	2.000	1.70
80350	35	4	4.220	1.200	1.35
74765	35	5	4.235	1.025	1.38
80675	35	6	4.254	0.575	3.35
60560	35	7	4.375	1.290	1.91
65330	35	8	4.500	0.710	2.66
61075	35	9	4.500	1.400	1.90
77915	35	10	4.500	1.920	1.67
77290	35	11	4.500	2.000	1.54
80645	35	12	4.500	2.020	1.23
70665	35	13	4.560	0.270	4.27
70680	35	14	4.560	0.472	3.07
70195	35	15	4.560	1.430	1.58
60585	35	16	4.562	0.750	2.15
70440	35	17	4.573	1.875	1.54
72085	35	18	4.600	0.570	2.20
77370	36	1	4.600	0.700	1.96
69945	36	2	4.600	0.920	1.78
74155	36	3	4.600	1.150	1.61
72090	36	4	4.600	1.395	1.25
80265	36	5	4.610	0.520	2.81
70970	36	6	4.650	2.110	1.38
64795	36	7	4.702	2.312	1.64
65350	36	8	4.750	0.500	3.50
79025	36	9	4.800	0.950	2.15
62890	36	10	4.800	1.340	2.14
62655	36	11	4.870	1.312	1.68
77175	36	12	4.900	1.062	1.55
80965	36	13	4.900	1.680	2.61
61745	36	14	4.990	1.260	2.06
62620	36	15	5.000	0.467	3.89
67895	36	16	5.000	0.490	2.38
80640	36	17	5.000	1.550	1.27
67490	36	18	5.000	1.750	1.57
78570	36	19	5.060	0.230	4.93
82705	36	20	5.118	0.955	2.12
82610	37	1	5.135	0.540	3.28
61980	37	2	5.180	1.350	1.60
63565	37	3	5.250	1.200	1.89
61085	37	4	5.375	1.312	1.52
77920	37	5	5.380	1.520	1.58
64315	37	6	5.500	2.000	1.25
82595	37	7	5.510	0.360	2.43
65325	37	8	5.560	0.700	3.21
60215	37	9	5.561	1.312	1.68
61790	37	10	5.750	0.687	3.00
76755	37	11	5.750	1.600	1.09
71170	37	12	5.750	2.750	1.44
71150	37	13	5.815	1.150	1.81
71350	37	14	5.860	2.000	1.19
71845	37	15	5.860	3.150	1.07
60230	37	16	5.886	1.250	1.77
64500	37	17	5.900	1.062	1.33
80710	37	18	6.000	0.285	2.74
62995	38	1	6.000	0.350	3.34
62440	38	2	6.000	1.000	1.76
68995	38	3	6.000	1.312	1.41
72385	38	4	6.000	1.600	1.13
74645	38	5	6.026	0.700	1.98
60140	38	6	6.0800	1.750	1.39
71145	38	7	6.0800	2.250	1.00
64225	38	8	6.120	2.000	1.64
66690	38	9	6.200	0.650	1.85
81480	38	10	6.300	1.310	1.30
64360	38	11	6.420	1.210	1.24
60340	38	12	6.437	1.312	1.28
75560	38	13	6.496	2.815	0.83
61070	38	14	6.500	1.600	1.30
69180	38	15	6.500	2.165	1.07
71395	38	16	6.624	1.281	1.21
69800	38	17	6.625	1.781	0.94
62155	38	18	6.646	1.312	1.26
62060	38	20	6.750	1.630	1.23
62285	38	19	6.750	1.630	1.23
76535	39	1	6.800	1.230	1.53
77555	39	2	6.800	2.120	0.91
81520	39	3	6.850	1.000	2.55
79190	39	4	6.890	0.984	1.85
61830	39	5	6.900	1.540	1.42
81055	39	6	7.000	0.465	2.18
82555	39	7	7.020	1.198	1.12
62510	39	8	7.062	1.062	1.60
62660	39	9	7.150	1.312	1.18
68855	39	10	7.201	0.460	1.51
68780	39	11	7.321	1.500	1.33
61915	39	12	7.340	0.875	1.48
65445	39	13	7.340	1.312	1.12
66880	39	14	7.340	1.330	1.18
62280	39	15	7.360	0.690	2.06
80815	39	16	7.434	0.875	1.50
63350	39	17	7.625	0.575	2.38
60910	39	18	7.688	0.630	2.58
82740	40	1	7.700	0.660	1.18
61880	40	2	7.720	1.350	1.13
81410	40	3	7.875	0.687	2.05
63745	40	4	7.875	1.281	1.13
63925	40	5	7.875	1.312	1.05
72480	40	6	8.000	0.680	2.33
71235	40	7	8.000	1.125	1.48
62805	40	8	8.034	0.575	2.28
80580	40	9	8.100	1.310	0.90
70400	40	10	8.320	2.000	1.22
60815	40	11	8.350	2.000	1.22
71390	40	12	8.500	1.400	1.20
80715	40	13	8.600	0.667	1.57
65515	40	14	8.656	1.462	1.18
80510	40	15	9.000	1.312	0.98
65440	40	16	9.000	1.800	0.87
65615	40	17	9.031	2.594	0.67
82265	40	18	9.310	1.060	1.22
77335	40	19	9.355	3.495	0.66
80575	40	20	9.380	1.310	0.90
66480	41	1	9.400	2.000	0.93
82590	41	2	9.429	1.420	0.65
71000	41	3	9.508	0.437	2.52
68295	41	4	9.730	0.565	1.23
76525	41	5	9.750	1.800	0.90
62725	41	6	9.750	2.280	0.72
62185	41	7	9.850	2.000	1.18
60520	41	8	9.875	1.312	0.90
73265	41	9	9.880	0.650	1.36
61780	41	10	9.884	0.575	1.89
77810	41	11	10.125	1.312	0.85
78715	41	12	10.156	1.876	0.69
65525	41	13	10.328	2.369	0.64
69695	41	14	10.433	1.615	0.98
81245	41	15	10.500	1.130	0.84
82375	41	16	10.500	1.170	1.21
62325	41	17	10.500	1.625	0.82
76125	41	18	10.695	1.625	0.86
61785	42	1	10.780	3.770	0.79
75890	42	2	10.820	1.750	0.74
65340	42	3	11.000	2.300	0.63
72355	42	4	11.220	2.400	0.54
80605	42	5	11.560	1.130	0.81
69200	42	6	11.750	2.875	0.56
80345	42	7	11.969	1.578	0.78
70165	42	8	12.000	1.780	0.61
81640	42	9	12.000	1.810	0.58
65535	42	10	12.203	2.885	0.60
61155	42	11	12.250	1.000	0.94
69960	42	12	12.600	2.321	0.55
72225	42	13	12.750	1.350	0.69
62645	42	14	13.680	1.000	0.97
82445	42	15	13.800	2.885	0.54
71770	42	16	14.500	1.062	0.75
72545	42	17	14.750	2.750	0.48
63340	42	18	17.000	1.312	0.49
62335	42	19	19.000	1.312	0.44

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72695	42	20	1.055	0.417	11.30
62365	43	1	1.150	0.460	11.01
80725	43	2	1.464	0.296	10.55
60185	43	3	1.500	0.350	13.76
80505	43	4	1.700	0.500	8.74
60950	43	5	1.750	0.500	8.70
61770	43	6	1.750	0.710	6.13
82580	43	7	1.850	0.640	6.22
80170	43	8	1.938	0.935	6.92
61420	43	9	2.000	0.375	6.83
62355	43	10	2.075	1.315	5.10
66435	43	11	2.100	0.540	4.78
62215	43	12	2.120	1.500	4.09
81920	43	13	2.280	0.450	4.75
78450	43	14	2.360	0.970	4.32
62220	43	15	2.375	0.935	4.94
81905	43	16	2.400	0.450	4.71
60985	43	17	2.440	0.720	5.99

AAVID THERMALLOY
www.aavidthermalloy.com

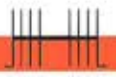
AMERICA
USA Tel: +1 (603) 224-9988 email: info@aavid.com

EUROPE
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com

ASIA
Singapore Tel: +65 6362 8388 email: sales@aavid.com.sg
Taiwan Tel: +886(2) 2698-9888 email: sales@aavid.com.tw

Part #	Page #	Locator #	Width	Height	θn
72425	43	18	2.480	0.380	5.52
61065	44	1	2.660	1.281	3.78
60865	44	2	2.687	0.687	5.71
61390	44	3	2.800	1.330	3.27
61040	44	4	2.810	0.935	3.86
60625	44	5	3.088	1.700	3.12
61455	44	7	3.140	1.312	3.04
64835	44	8	3.140	1.312	3.04
81060	44	6	3.140	1.312	2.90
61035	44	9	3.250	0.935	3.19
61060	44	10	3.270	1.281	2.84
61055	44	11	3.436	1.400	2.73
65695	44	12	3.500	1.620	3.03
60555	44	13	3.622	0.400	5.61
60110	44	14	3.687	0.562	4.79
60725	44	15	3.688	0.562	3.14
60935	44	16	3.750	1.000	2.68
60570	44	17	3.750	1.335	2.62
60850	44	18	3.812	0.750	4.80
82200	44	19	3.831	1.000	2.57
63725	44	20	3.880	0.700	5.31
61850	45	1	3.882	1.312	2.19
60630	45	2	3.900	1.281	2.29
61050	45	3	3.920	1.688	2.87
60395	45	4	3.937	0.750	3.54
76625	45	5	3.960	0.565	3.21
60665	45	7	4.000	0.687	3.48
61445	45	6	4.000	0.687	4.13
71115	45	8	4.000	0.700	2.09
61030	45	9	4.000	1.000	2.90
62475	45	10	4.000	1.250	2.46
82350	45	11	4.000	1.250	2.52
60905	45	12	4.000	1.400	2.22
63275	45	13	4.140	1.400	2.21
63060	45	14	4.436	1.375	2.54
60805	45	15	4.500	1.000	2.53
60350	45	16	4.500	1.400	2.17
67870	45	17	4.500	1.580	3.37
65990	45	18	4.600	0.720	2.24
65555	46	1	4.600	0.920	2.08
74365	46	2	4.650	1.288	1.57
60840	46	4	4.812	1.312	2.12
66635	46	3	4.812	1.312	2.49
78950	46	5	5.000	1.500	1.76
68830	46	6	5.120	0.710	2.52
60845	46	7	5.312	0.875	3.58
81760	46	8	5.600	1.035	2.02
62460	46	9	5.640	1.000	2.25
62410	46	10	5.640	2.000	1.38
81880	46	11	5.859	1.347	1.03
60970	46	12	5.886	0.815	2.77
75700	46	13	5.900	1.337	1.56
60440	46	14	6.000	1.187	2.18
61690	46	15	6.100	1.600	1.64
60900	46	18	6.500	1.600	1.51
61475	46	17	6.500	1.600	1.51
61715	46	16	6.500	1.600	1.62
61230	46	19	6.750	0.734	2.11
60995	46	20	6.750	1.185	1.50
61710	47	1	6.750	1.210	1.50
79455	47	2	6.800	1.402	1.21
61340	47	3	7.000	1.250	1.61
62495	47	4	8.500	1.500	1.13
70455	47	5	8.910	0.530	2.24
61665	47	6	9.500	1.218	1.53
62030	47	7	9.870	1.310	1.05

DOUBLE SIDED



60450	47	8	3.350	0.906	2.78
60455	47	9	3.359	2.000	2.03
61140	47	10	3.600	1.125	2.76
60500	47	11	3.937	1.875	2.05
60645	47	12	4.000	1.250	2.28
64245	47	13	4.000	1.281	2.13
60355	47	14	4.000	2.060	2.31
60830	47	15	4.000	2.250	1.96
60755	47	16	4.000	2.625	1.51
80400	47	17	4.500	1.032	3.13
60835	47	18	4.500	2.500	1.54
60280	48	1	4.625	1.500	1.99
60050	48	3	4.750	1.250	2.28
60245	48	2	4.750	1.250	2.11
60065	48	4	4.750	1.875	1.98
79075	48	5	4.750	2.000	1.73
60055	48	8	4.750	2.625	1.45
60780	48	7	4.750	2.625	1.61
61760	48	6	4.750	2.625	1.81
67075	48	9	4.750	2.625	1.56
62310	48	10	4.760	2.500	1.55
63140	48	11	4.770	2.000	1.71
60565	48	12	4.812	2.468	1.30
64375	48	13	5.120	1.250	1.71
66340	48	14	7.220	0.960	1.47
60410	48	15	7.500	1.375	1.51
62160	48	16	7.990	1.060	1.01
76960	48	17	9.393	0.892	1.24
69545	48	18	9.870	2.320	0.51

MAX CLIP

78065	48	19	0.764	1.102	6.93
78265	49	2	0.866	1.122	8.72
78240	48	20	0.866	1.378	5.51
78245	49	5	1.062	2.362	2.97
78255	49	1	1.063	1.063	11.48
78080	49	7	1.063	2.362	2.94
78060	49	3	1.181	1.772	4.17
78020	49	4	1.181	1.850	4.72
78220	49	9	1.181	2.362	3.65
78010	49	10	1.339	2.953	1.89
78075	49	8	1.495	2.126	3.03
78070	49	11	1.575	2.953	2.25
79360	49	6	1.181	2.204	3.98
78345	49	12	2.677	1.535	2.63
78030	49	13	2.895	2.362	1.76

T'S W FINS

78770	50	3	1.322	3.300	4.16
68255	49	14	1.000	1.440	7.13
64285	49	15	1.750	1.600	5.08
63265	50	1	1.450	2.000	5.17
63005	49	16	2.100	1.250	3.93
62480	50	2	2.215	2.620	3.04
63010	49	17	2.300	1.250	3.73
61150	49	18	1.250	2.500	4.35
72185	50	4	2.500	3.500	1.52
63250	50	5	4.120	2.900	2.01

RAIL

64300	50	8	1.880	0.500	9.05
63380	50	6	1.400	0.900	9.19
66330	50	7	1.550	1.150	7.65
61590	50	9	1.830	0.562	9.37
61325	50	10	2.260	1.380	4.96
63215	50	11	2.500	1.000	6.00
65295	50	12	2.600	0.690	6.40
61875	50	13	2.750	1.500	4.25
61485	50	14	4.543	1.220	2.58
61285	50	15	4.562	0.500	3.31

Part #	Page #	Locator #	Width	Height	θn

MISCELLANEOUS

60525	52	20	1.650	1.200	5.85
61435	53	1	1.750	1.800	3.95
60180	53	3	1.750	2.250	2.94
78610	53	2	1.750	2.250	2.91
60070	52	3	2.000	0.562	6.96
65930	53	16	2.000	2.000	2.96
61960	52	19	2.000	2.120	2.00
61775	53	4	2.150	2.650	1.99
61820	53	15	2.280	3.260	1.94
67360	53	6	2.322	2.250	3.59
81255	53	7	2.800	2.250	1.72
60150	52	4	3.960	1.600	2.46
62290	50	16	4.000	1.750	2.20
62720	52	5	4.000	1.900	1.88
60255	52	7	4.000	4.000	1.09
61270	52	8	4.000	4.000	1.13
60080	52	6	4.125	1.000	2.91
61175	52	9	4.250	4.300	1.25
69620	53	8	4.702	3.312	1.50
60060	52	12	4.750	4.500	0.98
60105	52	11	4.750	4.500	1.02
60650	52	10	4.751	3.000	1.14
62905	51	15	4.921	5.315	0.77
66975	51	16	4.921	5.330	0.69
77495	50	17	5.000	1.155	2.20
61640	50	18	5.000	2.000	1.42
60540	51	1	5.000	2.250	1.24
61965	50	20	5.000	2.250	1.23
62190	51	2	5.000	2.250	1.42
67170	50	19	5.000	2.250	1.29
68360	51	3	5.000	2.500	1.28
60260	52	13	5.000	5.000	0.84
64160	52	14	5.250	3.159	1.69
62375	51	17	4.921	5.374	0.76
60925	53	9	5.625	1.875	2.31
62780	51	4	5.906	2.411	0.96
74970	51	5	6.140	1.950	1.24
60730	51	6	6.250	2.000	1.37
61310	51	7	6.250	2.000	1.37
60265	52	15	6.250	6.250	0.67
79240	52	16	6.250	6.250	0.65
61350	53	12	6.375	2.862	1.19
62100	51	18	6.000	6.875	0.47
81955	51	8	7.000	3.000	0.94
60655	51	10	7.000	3.125	0.85
61570	51	9	7.000	3.125	0.81
64730	52	1	7.000	3.450	0.75
63880	52	2	7.500	2.850	0.78
63885	51	11	7.500	2.850	0.70
63155	53	10	7.578	3.125	0.97
81655	51	12	7.870	2.850	0.70
65130	53	11	8.080	4.440	1.06
61015	52	17	9.250	6.750	0.60
68020	53	13	9.420	2.870	1.37
61540	51	13	9.800	2.900	0.65
81985	51	14	13.000	4.040	0.46
61925	53	17	2.350	2.350	3.30
62165	52	18	2.200	1.750	3.40
73110	53	18	7.480	5.280	0.50
62675	53	14	1.832	0.770	5.80
66470	53	5	1.700	2.430	3.00

STRUCTURAL

Page 54

How to Order Extrusion Profiles

General Information:

Extrusions are available in standard bar lengths which are normally 8 foot long sections, but length may vary for some shapes.
Extrusions are unfinished and may be ordered with a black anodize or chromate finish when purchased cut to size. The standard tolerance of all cut to length extrusions is ± 0.015 inches (± 0.38mm).

Creating an Extrusion Part Number

To order most Aavid Thermalloy extrusions in bar form or cut to size, you must construct a 12 digit part number. For custom fabricated, Aavid Thermalloy will use the customer drawing number and revision level as the part number.

65605 X X XXXXX

Custom cut length
0 0 0 0 0 = For cut length options 1 and 2 use 5 zeros.
Indicate length in inches to three decimal places; if the part is less than 10 inches, the first of these 5 digits (the 7th of the 12 digit series) would be a zero (0). See example below.

Finish F = Mill as extruded finish. Used for bar length ordering.
U = Unfinished / Wash*
B = Black anodize
C = Gold Chromate

Cutting options
1 = Full stick length—sold by the foot (normally 8 feet).
2 = Half stick length—sold by the foot (small cut fee).
3 = Cut to custom length specified using digits 8–12. Sold by the piece. *See example below.*

Extrusion profile base part number

Examples

If you wanted to simply order extrusion 62335 in standard bar form, the part number would be: 623351F00000. The unit price would be sold by the foot.

If you wanted extrusion 60520 cut to a length of 6.500" and black anodized, the part number would be: 605203B06500. The unit price would be by the piece.

If you wanted extrusion 61155 cut to a length of 14.725" and a wash finish, the part number would be: 611553U14725. The unit price would be by the piece.

*For unfinished extrusions with cut lengths other than half bar, the finish designation is a U.

Part Class (Popularity Code)

Based on current popularity, the part class gives an indication of how likely a part is to be in stock. We have labeled all class A extrusions in this catalog. Look for the class A designation above the part numbers in the profile pages. Please visit **www.aavidthermalloy.com** for stock and classification details.

Class A
Popular extrusion used by multiple customers. Safety stock is set up on Aavid Thermalloy's system to try and keep some inventory on hand at all times (unless depleted by sudden demand). Re-order points are set up so that we normally have a flow of material within short lead times. Class A extrusions are noted in this catalog above the part number.

Class B
Moderately popular extrusion used by multiple customers. Strong likelihood of some material being available from stock or on backorder. When inventory is depleted we will re-order upon demand with minimal lead times and NO set up charges.

Class C
Low demand / low usage extrusion with few / one customer demand. About a 35% chance of material in stock at time of order. If material is not in stock at time of order, a set up charge will apply. Normal minimum run is generally 500 pounds for less than 7" circle size, 1,000+ pounds for greater than 7" circle size. Contact your sales associate or visit **www.aavidthermalloy.com** for current inventory status.

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USA Tel: +1 (603) 224-9988 email: info@aavid.com

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How to calculate aluminum extrusion weight per unit length

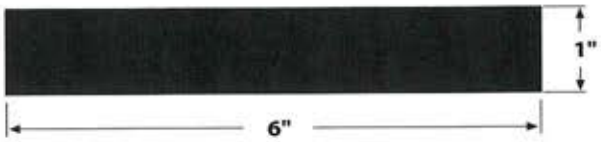
To calculate the approximate weight per foot, the formula is as follows:

Cross-section area of the part (in square inches) times the density of aluminum (0.097 lbs/in³) times 12 inches/foot

To calculate the approximate metric weight per meter, the formula is as follows:
Cross section of the part (in square meters) times the density of aluminum (2,700 kg/m³).

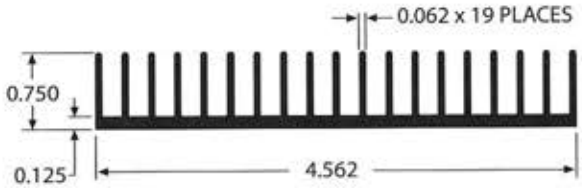
As more material is pushed through the extrusion die and there is wear on the die, the weight per foot will increase slightly. This method for calculating weight is approximate only. Actual weight needs to be determined after the extrusion is pushed.

Example:



If the bar stock above is 6 inches wide by 1 inch thick, weight per foot would be calculated as follows:
6 inches wide x 1in tall x 0.097 lb/in³ (density of aluminum) x 12 in/ft = 6.984 lb/ft

Example:



For the finned extrusion above, 60585, you have to make a couple of calculations to determine the weight; you need to calculate the base and fins separately.

Base:
4.562 in wide x 0.125 in thick x 0.097 lb/in³ (density of aluminum) x 12 in/ft = 0.664 lb/ft

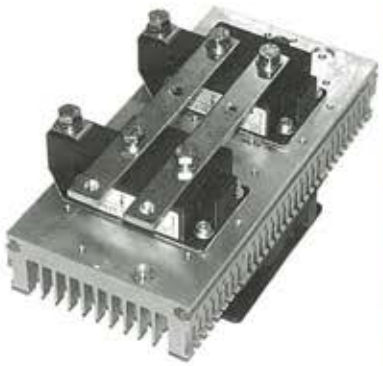
Fins:
19 fins x 0.625 in tall x 0.062 in thick x 0.097 lb/in³ (density of aluminum) x 12 in/ft = 0.857 lb/ ft

Total Shape:
0.664 lb/ft for base + 0.857 lb/ft for fins = 1.521 lb/ft

NOTE: To convert weight per foot in tables to metric weight per meter, multiply by 1.488.

Aavid Thermalloy's Extrusion Design and Machining Capabilities

Let Aavid Thermalloy assist you with product design or fabrication needs:



- **Assistance with new product design**
  - New custom extrusions profiles to meet your mechanical and thermal requirements.
    - Let our engineers aid you in designing the most cost-effective solution for your application. We have thousands of shapes and sizes to choose from; if none suits your application, we can design a new shape that will satisfy all your needs.
- **Supply of full or cut to length standard shapes**
  - Raw extrusion sold by the foot in bar form (typically 8 foot lengths)
  - Extrusion cut to precision length and cut ends deburred
  - Simple wash or corrosion inhibiting finishes
- **Complete "Build to Print" fabricated assemblies**
  - Completely machined and finished to your drawing specifications. We have factories throughout North America, Europe and Asia with complete machining and finishing capabilities for aluminum extrusion assemblies. The majority of extruded product supplied is custom fabricated to customer specification.
    - Cutting to length with saws capable of holding precision tolerances on cut length and squareness
    - Large or small bed CNC machining for single or multiple axis which are capable of consistently holding .001"/" flatness as well as close tolerances for feature to feature dimensions.
    - Finishing / Plating
      - Anodize
      - Chromate / Irridite Conversion
      - Caustic Etch / Wash
      - Nickel or Tin Plate
      - Powder Coat
      - Paint
      - Silkscreen
      - Marking

Aavid Thermalloy can deliver all your extrusion needs regardless of how

- Large or small
- Simple or complex
- Conceptual or fully 3D CAD designed

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www.aavidthermalloy.com

AMERICA
USA Tel: +1 (603) 224-9988 email: info@aavid.com

EUROPE
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com

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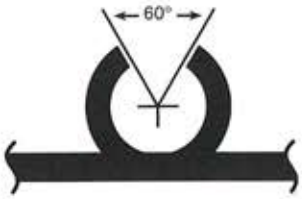
Singapore Tel: +65 6362 8388 email: sales@aavid.com.sg
Taiwan Tel: +886(2) 2698-9888 email: sales@aavid.com.tw

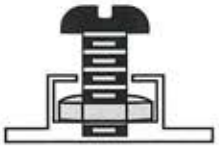
Extrusion Design Suggestions

There are a number of design suggestions in the section below. Incorporating some/many of these design suggestions into your final product should allow you to come up with a more cost effective design.



- Incorporate a "screw boss" into the design to save the cost of drilling a hole. You can use a thread-forming / self-tapping screw during assembly. Recommended opening of 60 degrees for ease of extrudability.

- Add an "ID" mark such as a small depression or ridge to a non-exposed surface/area of the extrusion design. This could serve as a guide to where holes should go, allow people to tell one side from another during machining or assembly or to differentiate material between two or more suppliers of the same shape.

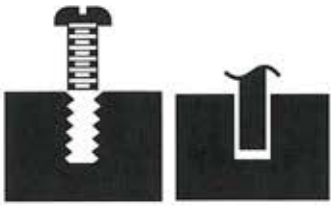


- Incorporate bolt head channels for bolt heads or nuts to facilitate assembly.

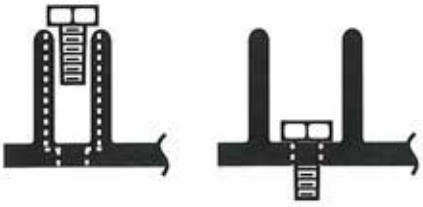
- Dove-tails, interlocking or snap-fit joints can be designed to mate pieces together. Try designing a 2-piece extrusion as it may reduce the cost of secondary fabrication or it may be less costly to manufacture in terms of material and/or tooling costs.

Other criteria for the design and selection of a heat sink should include:

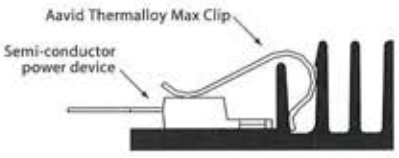
- Base plate thickness
- Ease of manufacturing
- Fin height, spacing, thickness
- Orientation of fins
- Type of material
- Weight



- To save machining time, incorporate PC board slots or serrated extruded slots for threaded hardware into the extrusion design.



- When locating a thru or tapped hole in the extrusion, make an effort to allow clearance on the other side or design such that the hole does not break through. If a thru or tapped holes falls into a fin or other feature on the opposite side, it makes it difficult to hold the integrity of the thread, the location of the hole and it also makes it difficult to remove burrs caused by the machining.

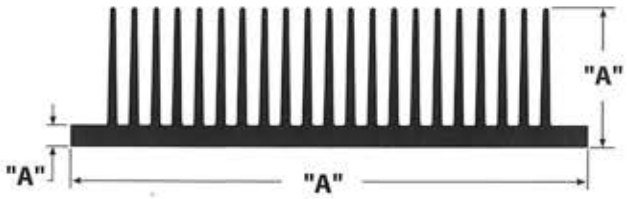


- Extruded rails for mounting clips saves assembly costs.

- When designing fins or other related features, attempt to keep the features as uniform in thickness as possible to allow for the extrusion to fill properly. Do not design heavy masses adjacent to smaller/narrow features. Adding a taper to a fin (thicker at base, thinner at tip) allows for easier extrudability.

Dimensional Tolerances for Aluminum Extrusions

Aavid Thermalloy aluminum extrusions meet or exceed the standard commercial tolerances established by the Aluminum Association, Inc. The tolerance for an extrusion dimension is a function of the size of the particular dimension and the diameter of the extrusion die as shown in Table A. The illustration shown is a typical flatback extrusion. Tolerances for extreme ratios and some large extrusions tend to exceed the tolerances listed on this table and, conversely, some of the smaller (less than 7 inch diagonal) extrusions can be supplied with tighter tolerances.



When defining machined flatness, use the statement of 0.001"/in. to preclude steps allowable with other methods of defining flatness. See Table B on page 15.

Aavid Thermalloy standard machining tolerances are +/- 0.010 in. for lead-in dimensions from edge/datum line, and +/- 0.005 in. thereafter from feature to feature. Due to the nature of extruded aluminum, this may not coincide exactly with the generic tolerances listed on most drawing title blocks. In the majority of cases, however, it is sufficient. If you require tighter tolerance, we can accommodate this need with additional machining. Please contact our Applications Engineering Department with any questions or concerns regarding these tolerances.

Table C, on page 15, lists the typical properties of 6063-T5 Aluminum Extrusion Alloy.

Table A: Typical Tolerances for Aluminum Extrusions

	+/- Tolerance on "A" Diameter of Extrusion Die	
Dimension A	**Up to 10" (254 mm)**	**10" (254 mm)**
Less than 0.125 (3.0)	0.006 (0.15)	0.014 (0.36)
0.125–0.249 (3.0–6.3)	0.007 (0.18)	0.015 (0.38)
0.250–0.499 (6.4–12.6)	0.008 (0.21)	0.016 (0.41)
0.500–0.749 (12.7–19.0)	0.009 (0.23)	0.017 (0.43)
0.750–0.999 (19.1–25.3)	0.01 (0.25)	0.018 (0.46)
1.000–1.499 (25.4–38.1)	0.012 (0.30)	0.019 (0.48)
1.500–1.999 (38.2–50.7)	0.014 (0.35)	0.024 (0.61)
2.000–3.999 (50.8–101.6)	0.024 (0.61)	0.034 (0.86)
4.000–5.999 (101.7–152.4)	0.034 (0.86)	0.044 (1.12)
6.000–7.999 (152.5–203.2)	0.044 (1.12)	0.054 (1.37)
8.000–9.999 (203.3–254.0)	0.054 (1.37)	0.064 (1.63)
10.000–11.999 (254.1–304.7)		0.074 (1.88)
12.000–13.999 (304.8–355.5)		0.084 (2.13)
14.000–15.999 (355.6–406.3)		0.094 (2.39)
16.000–17.999 (406.4–457.1)		0.104 (2.64)
18.000–19.999 (457.2–508.0)		0.114 (2.90)

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www.aavidthermalloy.com
AMERICA
EUROPE
USA Tel: +1 (603) 224-9988 email: info@aavid.com
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com
ASIA
Singapore Tel: +65 6362 8388 email: sales@aavid.com.sg
Taiwan Tel: +886(2) 2698-9888 email: sales@aavid.com.tw

Dimensional Tolerances for Aluminum Extrusions

Flatness and surface roughness tolerances of extruded surfaces are also useful for heat sink applications. The following table lists typical ranges:

Table B: Flatness and Surface Roughness Table

Aluminum Surface	Flatness (in/in)	Surface Roughness (RMS)
As Extruded	0.004 (up to 0.006 for wider shapes)	250–125
Timesaver Sanding (except for edge rounding)	0.002/.003	64–32
Machined	0.001	64 or better

Table C:Typical Properties of 6063-T5 Aluminum Extrusion Alloy*

	Value	
Physical Property	**English**	**Metric**
Average Coefficient of Thermal Expansion	13.0 µin/in °F (68°–212 °F)	23.4µm/m °C (20–100C)
Approximate Melting Range	1140°F–1210°F	610–654°C
Thermal Conductivity	1450 BTU-in/ft²-hr-°F (@ 77°F)	209 W/m-K (@ 25 °C)
Electrical Resistivity	2.8 µOhm-cm (@ 68°F)	SAME
Ultimate Strength	27,000 PSI	186 MPa
Yield Strength	21,000 PSI	145 MPa
Elongation	12% (1/16"(1.6mm) thick specimen)	SAME
Hardness Brinell No.	60 (500 kg load, 10 mm ball)	SAME
Ultimate Sheer Strength	17,000 PSI	117 MPa
Fatigue Endurance Limit	10,000 PSI (500 x 10^8 cycles Moore Mach.)	68.9 MPa
Modulus of Elasticity	10 x10^6 PSI	68.9 GPa

* Source: Aluminum Standards and Data, 1988 Aluminum Association Inc.

Typical Machining Tolerances

Edge to datum	+/- 0.010
Feature to feature	+/- 0.005

Temperature Correction Considerations

Since natural convection heat sink efficiency degrades with decreasing sink-to-ambient temperature differential, a correction factor must be applied to the published data if an application requires a sink-to-ambient temperature rise of less than 75°C. The corrected thermal resistance is obtained by multiplying published °C/W/3-in data by the appropriate factor from the following table:

Temperature Rise (ΔTsa)	Correction Factor
75°C	1.000
70°C	1.017
60°C	1.057
50°C	1.106
40°C	1.170
30°C	1.257

For any extrusion profile in natural convection, the thermal resistance (°C/W) is more than 25% higher at ΔTsa = 30°C than at ΔTsa = 75°C.

Length Correction Considerations

The published extrusion data shows natural convection performance for a three inch section with a centrally located point source heat load. However, thermal resistance does not change linearly with length. (The ends of a very long extrusion would be cooler than the center and therefore the transfer of heat to the surrounding air is less efficient.) It is therefore necessary to apply a correction factor to published data for extrusion lengths shorter or longer than three inches. The corrected thermal resistance for different lengths of extrusion is obtained by multiplying published °C/W/3-in data by the appropriate factor from the following table:

Heat Sink Length	Correction Factor
1.0 inch (25.4mm)	1.80
2.0 inch (50.8mm)	1.25
3.0 inch (76.2mm)	1.00
4.0 inch (101.6mm)	0.87
5.0 inch (127.0mm)	0.78
6.0 inch (152.4mm)	0.73
7.0 inch (177.8mm)	0.67
8.0 inch (203.2mm)	0.64
9.0 inch (228.6mm)	0.60
10.0 inch (254.0mm)	0.58
11.0 inch (279.4mm)	0.56
12.0 inch (304.8mm)	0.54
13.0 inch (330.2mm)	0.52
14.0 inch (355.6mm)	0.51
15.0 inch (381.0mm)	0.50

This Extrusion Length Correction Factor Table can also be used to determine the length of extrusion required to obtain a desired thermal resistance. Divide the desired thermal resistance by the published thermal resistance for a three inch section to obtain the correction factor, which can be used to determine the correct length.

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AMERICA
USA Tel: +1 (603) 224-9988 email: info@aavid.com

EUROPE
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com

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Performance Factor Table (to approximate performance)

This table can be used to either determine the approximate perimeter to meet a thermal resistance goal or to determine the approximate thermal resistance of a custom shape.

To calculate a needed perimeter

Example: Heat sink with 0.5 °C/W requirement and 6.0" long in forced convection at 300ft/min:
Performance Factor divided by thermal resistance equals perimeter required

$$\frac{21.58}{0.5} = 43.16 \text{ inches of exposed perimeter is required}$$

To calculate the thermal resistance

Example: Heat sink with 55 inches of expanded perimeter, 3.0" long in natural convection and black anodized:
Performance Factor divided by perimeter equals thermal resistance

$$\frac{69.92}{55} = 1.27 \text{ °C/W (at 75°C rise and black anodized)}$$

EXTRUSION LENGTH (in)	NATURAL CONVECTION (at 75 °C)	FORCED CONVECTION, AIR VELOCITY (ft/min)											
		100	200	300	400	500	600	700	800	900	1000	1100	1200
0.25	242.20	183.33	129.63	105.84	91.66	81.98	74.84	69.29	64.81	61.11	57.97	55.27	52.92
0.50	171.27	129.63	91.66	74.84	64.81	57.97	52.92	48.99	45.83	43.21	40.99	39.08	37.42
1.00	121.10	91.61	64.77	52.89	45.80	40.96	37.40	34.62	32.38	30.53	28.97	27.62	26.44
2.00	85.63	64.89	45.88	37.46	32.44	29.02	26.49	24.52	22.94	21.63	20.52	19.56	18.73
3.00	69.92	52.88	37.39	30.53	26.44	23.64	21.58	19.98	18.69	17.62	16.72	15.94	15.26
4.00	60.55	45.81	32.39	26.45	22.90	20.49	18.70	17.31	16.19	15.27	14.48	13.81	13.22
5.00	54.16	40.99	28.98	23.66	20.49	18.33	16.73	15.49	14.49	13.66	12.96	12.36	11.83
6.00	49.44	37.39	26.44	21.58	18.69	16.72	15.26	14.13	13.22	12.46	11.82	11.27	10.79
7.00	45.77	34.61	24.47	19.98	17.30	15.48	14.13	13.08	12.23	11.53	10.94	10.43	9.99
8.00	42.82	32.39	22.90	18.70	16.19	14.48	13.22	12.24	11.45	10.79	10.24	9.76	9.35
9.00	40.37	30.53	21.58	17.62	15.26	13.65	12.46	11.53	10.79	10.17	9.65	9.20	8.81
10.00	38.30	28.97	20.48	16.72	14.48	12.95	11.82	10.94	10.24	9.65	9.16	8.73	8.36
11.00	36.51	27.62	19.53	15.95	13.81	12.35	11.27	10.44	9.76	9.20	8.73	8.32	7.97
12.00	34.96	26.44	18.69	15.26	13.22	11.82	10.79	9.99	9.34	8.81	8.36	7.97	7.63
13.00	33.59	25.40	17.96	14.66	12.70	11.36	10.37	9.60	8.98	8.46	8.03	7.66	7.33
14.00	32.37	24.48	17.31	14.13	12.24	10.95	9.99	9.25	8.65	8.16	7.74	7.38	7.06

Effects of Anodization on Radiational Heat Transfer

Heat sinks cooled by natural convection may benefit from an anodized finish, but the added cost of the finish may not be justified when the part is used in forced convection cooling.

Surface emissivity limits the amount of heat transfer due to radiational cooling. With 1.0 being perfect (black body), the emissivity of anodized aluminum is 0.85 and unfinished is 0.05.

Heat transfer due to radiation is proportional to the heat sink surface area exposed to its surroundings and to the temperature rise above ambient (in absolute °K) raised to the 4th power (T sink-ambient)^4. In natural convention on small heat sinks with open fins, radiational heat transfer may be as much as 25% of the total.

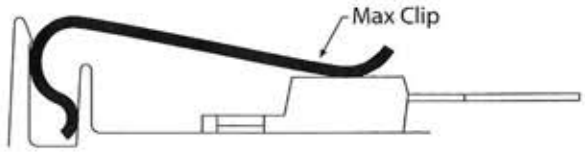
Relatively large extrusions and those used at low temperature rise, as in many high power applications, will only gain up to 10% by the addition of an anodized surface.

With forced ventilation (using a fan) convective heat transfer is about 4 times higher than in natural convection. This changes the proportion of heat transfer due to radiation. An anodized finish will only add 4 -8% to the overall cooling effect in forced air. This percentage again, depends on fin spacing and heat sink dimensions. The color of the anodized finish makes little impact on emissivity since most radiational heat loss occurs at wave lengths higher than visible light.

As a rule of thumb, if anodization is not required for aesthetic or corrosion protection, we recommend it only for small, open finned heat sinks in natural convection.

Extrusion Accessories

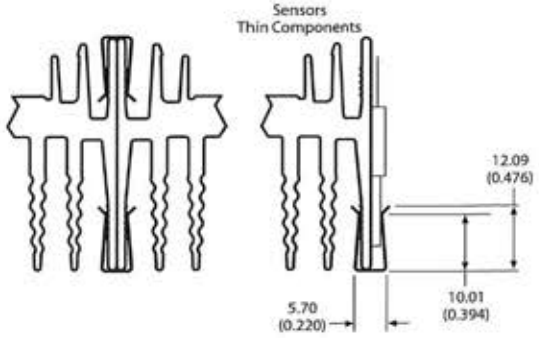
Max Clips



The Max Clip System™ for discrete power semiconductors is a high performance, low cost thermal solution that eliminates mounting holes, screws, rivets and the thermal inefficiency associated with using loose hardware to attach components to a heat sink. It also simplifies electrical isolation. This quick, robust attachment method saves on labor and hardware cost while increasing performance and design flexibility. The Max Clip System™ features unique Max extrusion profiles that should be accompanied by Max Clips to complete the system.

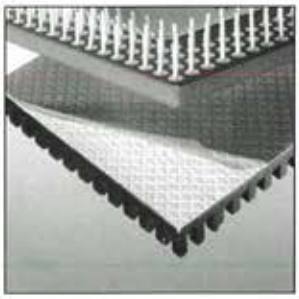
To learn more about the Max Clip System™ visit **www.aavidthermalloy** and use our Max Clip search tool or request a copy of out new Max Clip catalog.

Clips



Clips can be used to attach semiconductors to conventional extrusions or plates. These clips provide the necessary force to maintain proper thermal performance.

Double-Sided Tape

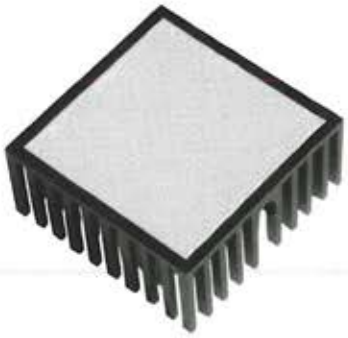


Tape Option
T404
T405
T410
T411
T412

Double-sided thermal tapes adhere the heat sink to the device and offer good thermal characteristics. They are easy to apply, require no curing time, can be electrically conductive or isolating, and need no mechanical support to provide thermal or physical contact between the device and the heat sink. Aavid Thermalloy can apply one side to a heat sink.

Tapes are available in many standard sizes and can also be designed in just about any custom size that you need.

Interface Material/Pads



Kon Dux
a factory applied cost-effective alternative to grease, it is thermally conductive

In-Sil 8
Thermally conductive and electrically isolating

Thermal interface pads are thicker than double-sided tapes, but can be provided without adhesive if removal of the pad may be necessary. Pads can also be either electrically conductive or isolating. Performance of the interface pad is dependent on maintaining correct, constant mounting pressure.

Pads are available in many standard sizes and can also be designed in just about any custom size you need.

For more information about extrusion accessories, contact your local Aavid Thermalloy sales office.

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USA Tel: +1 (603) 224-9988 email: info@aavid.com

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Italy Tel: +39 051 764011 email: sales.it@aavid.com
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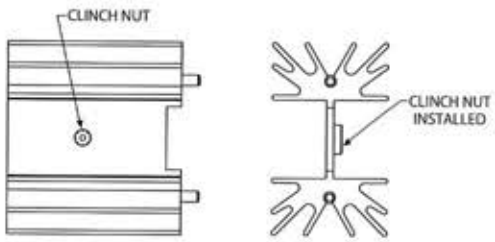
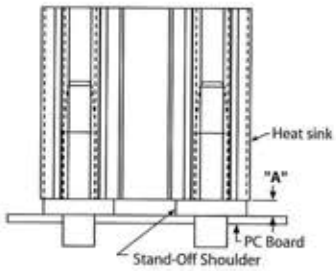
Extrusion Accessories

Clinch Nuts



Clinch nuts are threaded nuts that allow quick assembly of the device to the heat sink. A single screw mounts the device to the heat sink, reducing your hardware requirements. Clinch nuts are permanently pressed into the heatsink, and come in a variety of English and Metric threads. (CNE designates an English thread, and CNM designates a Metric thread.)

Solderable Pins



Vertical mounted, extruded heat sinks are converted to wave solderable with the addition of solderable roll pins. Roll pins are available with stand-off shoulders in different heights for easier cleaning after wave soldering and electrical isolation from PBC traces.

Grease & Epoxy

Aavid Thermalloy offers a wide variety of thermal greases and epoxies, available in many sizes.

Popular Greases:

- Sil-Free™ — A metal-oxide-filled, silicone-free synthetic grease
- Ther-O-Link™ — A silicone-based thermal compound
- Ultrastick™ — A unique phase-change thermal interface material, silicone-free
- Thermalcote™ — A silicone-based thermal grease
- Thermalcote II™ — A silicone-free synthetic grease

Popular Epoxies:

- Thermalbond™ — A thixotropic (smooth paste) thermally conductive epoxy
- Ther-O-Bond™ Adhesive — A thermally conductive, high strength epoxy adhesive

For more information about extrusion accessories, contact your local Aavid Thermalloy sales office.

High Fin Density

High Fin Density Extrusions

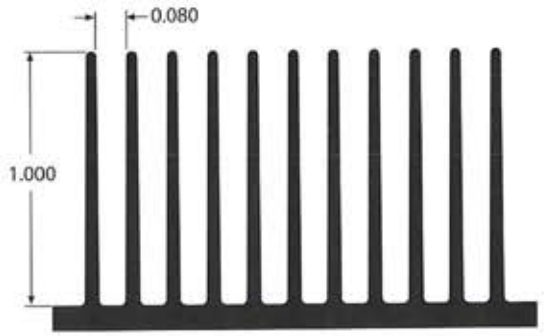
What's the advantage of higher fin ratio extrusions?

- Increased surface area (more fins in smaller volume) will result in improved heat dissipation in most designs.
- Design trends are heading toward more power dissipation in a limited space.
- Alternatives (forced fan cooling, bonded fins, fluid cooling) increase total unit cost. Extruded higher fin ratio heat sinks can simplify design, and reduce unit cost.

Calculating Fin Ratios:

$$\text{Fin ratio} = \frac{\text{Area of spacing between fins}}{(\text{gap between fins})^2}$$

In the figure to the right, the spacing between fins is 0.080. The fin height is 1.000 (not including the base). Spacing area is 0.08 sq. in. / divided by 0.0064 (0.080 x 0.080), therefore the fin ration = 12.5:1. If there is a radius on the fin tips, this radius would be subtracted from the fin height before calculating.



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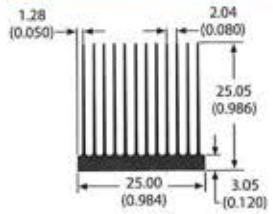
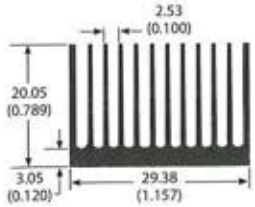


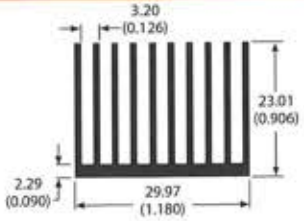
83115 0.4 lb/ft 3.07 °C/W/3in Per.=22.76

2



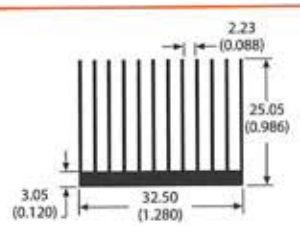
83120 0.4 lb/ft 3.80 °C/W/3in Per.=18.38

3



82455 0.6 lb/ft 3.72 °C/W/3in Per.=18.78

4



83130 0.5 lb/ft 2.99 °C/W/3in Per.=23.35

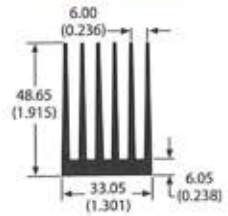
KEY

lb/ft = Weight per foot in pounds

°C/W/3in = Natural convection thermal resistance for a black anodized, 3 inch cut length

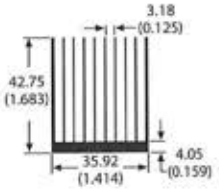
Per. = Perimeter in inches

5



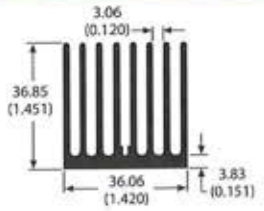
83135 1.4 lb/ft 3.08 °C/W/3in Per.=22.73

6



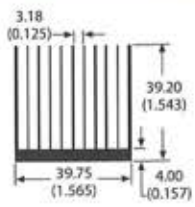
83140 0.8 lb/ft 2.10 °C/W/3in Per.=33.30

7



83145 1.2 lb/ft 2.96 °C/W/3in Per.=23.63

8



83150 0.8 lb/ft 2.08 °C/W/3in Per.=33.62

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EUROPE

USA Tel: +1 (603) 224-9988 email: info@aavid.com
Italy Tel: +39 051 764011 email: sales.it@aavid.com
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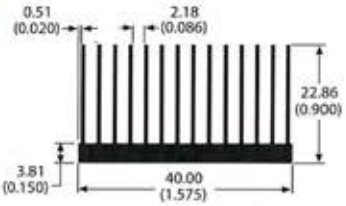
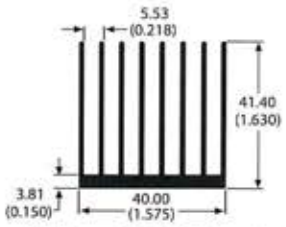
1



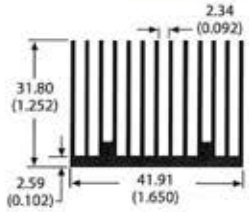
82165 0.6 lb/ft 2.88 °C/W/3in Per.=24.32

2



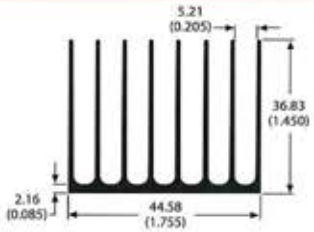
81190 1.0 lb/ft 2.60 °C/W/3in Per.=26.90

3



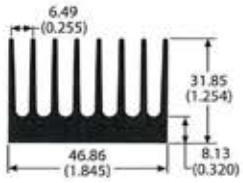
83155 1.0 lb/ft 2.11 °C/W/3in Per.=33.09

4



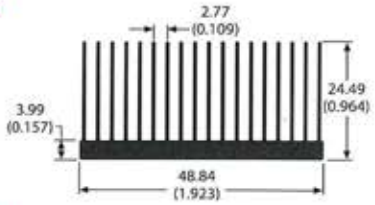
74385 0.8 lb/ft 2.82 °C/W/3in Per.=24.82

5



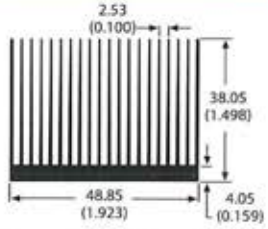
80380 1.4 lb/ft 3.81 °C/W/3in Per.=18.36

6



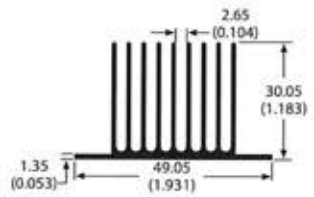
79840 0.9 lb/ft 2.14 °C/W/3in Per.=32.71

7



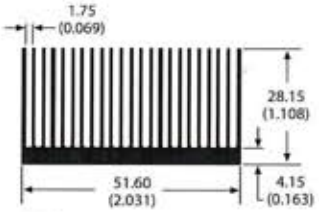
83160 1.3 lb/ft 1.22 °C/W/3in Per.=57.39

8



83165 0.7 lb/ft 2.95 °C/W/3in Per.=23.74

9



83170 1.0 lb/ft 1.47 °C/W/3in Per.=47.51

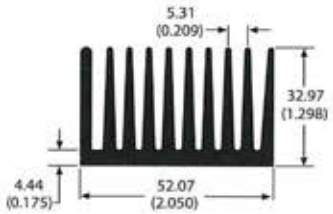
Extrusion Information

Gap – This is the distance between two fins, formed by a tongue in the extrusion die. The gap should not be below 0.090", dependent on the ratio.

Fin – Fins can be extruded as straight, tapered, or have serrations. Fin thickness can be as low as 0.030". Thinner fins require more pressure while extruding.

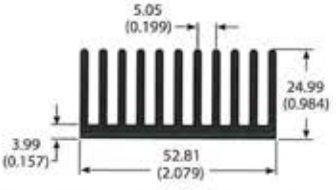
Base Plate – The base of the extrusion should not be thinner than the fins. The base thickness is typically not more then 5x the fin thickness.

10



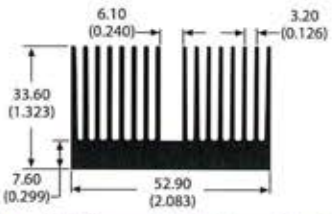
73115 1.8 lb/ft 2.72 °C/W/3in Per.=25.71

11



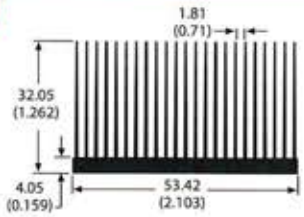
74810 1.3lb/ft 3.16 °C/W/3in Per.=22.15

12



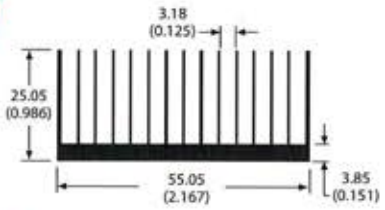
83175 1.5 lb/ft 1.89 °C/W/3in Per.=36.92

13



83180 1.3 lb/ft 1.27 °C/W/3in Per.=54.91

14



83185 0.8 lb/ft 2.38°C/W/3in Per.=29.39

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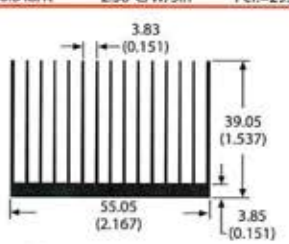
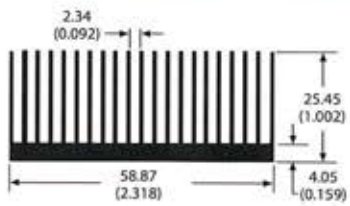


83190 1.1 lb/ft 1.52 °C/W/3in Per.=45.91

16



83195 0.9 lb/ft 1.91 °C/W/3in Per.=36.65

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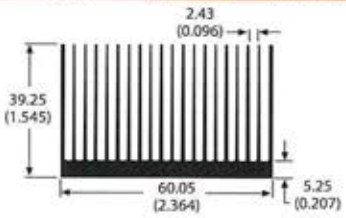
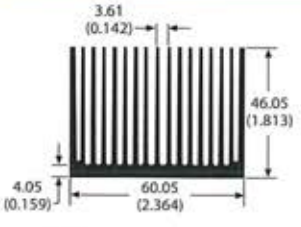


83210 1.7 lb/ft 1.20 °C/W/3in Per.=58.27

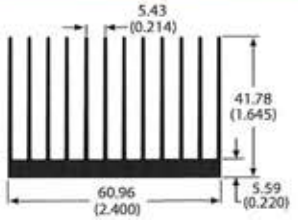
18



83200 2.0 lb/ft 1.15 °C/W/3in Per.=60.95

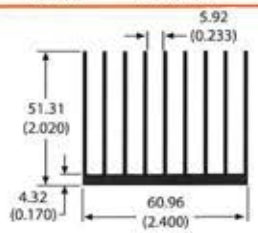
High Fin Density

1



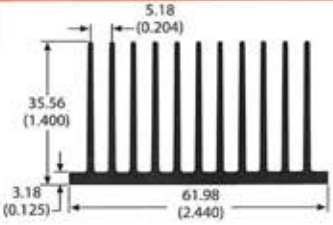
74785 1.5 lb/ft 1.79 °C/W/3in Per.=39.02

2



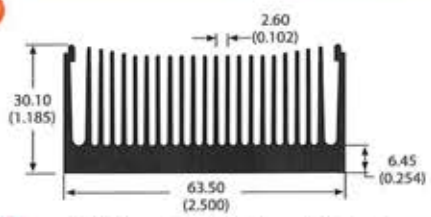
79010 1.6 lb/ft 1.82 °C/W/3in Per.=38.37

3



78585 1.3 lb/ft 2.16 °C/W/3in Per.=32.44

4

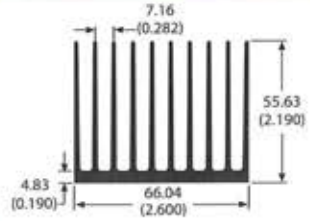


83215 1.7 lb/ft 1.44 °C/W/3in Per.=48.46

5

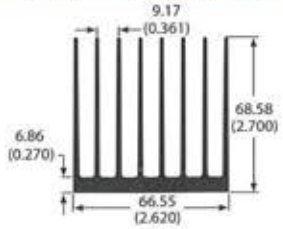
83220 1.6 lb/ft 1.01 °C/W/3in Per.=68.94

6



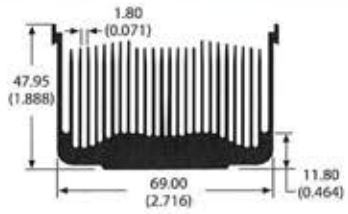
72095 2.3 lb/ft 1.57 °C/W/3in Per.=44.56

7



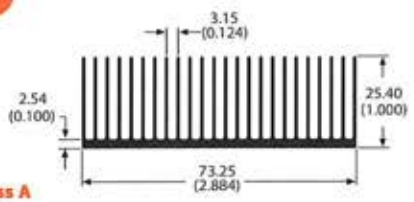
79000 2.6 lb/ft 1.59 °C/W/3in Per.=43.84

8



83225 2.1 lb/ft 0.86 °C/W/3in Per.=81.18

9

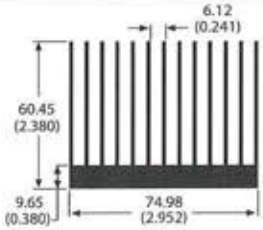


class A
73925 1.2 lb/ft 1.45 °C/W/3in Per.=48.21

Fabrication Capabilities

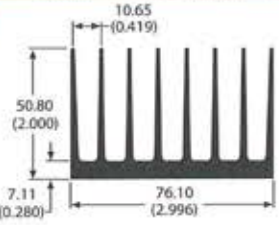
If the thermal solution requires complete fabrication of an extruded profile heat sink, Aavid Thermalloy is equipped for virtually any secondary operation. From a simple routine cut, deburr, and wash to complex milling, punching, finishing and accessory (pads, studs, etc) assembly.

10



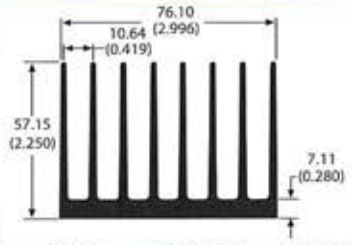
79290 3.1 lb/ft 1.19 °C/W/3in Per.=58.56

11



63020 2.3 lb/ft 1.90 °C/W/3in Per.=36.80

12



class A
63730 2.9 lb/ft 1.88 °C/W/3in Per.=37.15

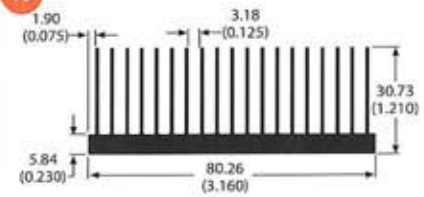
13

83230 1.7 lb/ft 1.25 °C/W/3in Per.=55.89

14

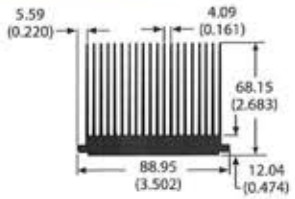
83235 1.7 lb/ft 1.43 °C/W/3in Per.=48.99

15



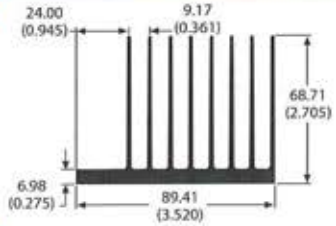
81870 1.7 lb/ft 1.59 °C/W/3in Per.=43.86

16



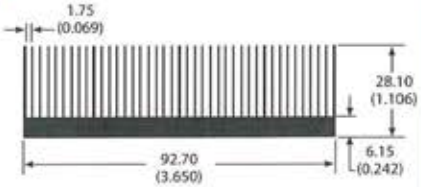
83240 4.5 lb/ft 0.73 °C/W/3in Per.=95.37

17



62580 2.9 lb/ft 1.53 °C/W/3in Per.=45.61

18



83245 2.0 lb/ft 0.89 °C/W/3in Per.=78.32

AAVID THERMALLOY
www.aavidthermalloy.com

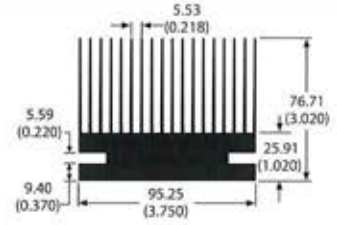
AMERICA
EUROPE

USA Tel: +1 (603) 224-9988 email: info@aavid.com
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com

ASIA

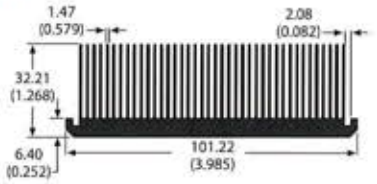
Singapore Tel: +65 6362 8388 email: sales@aavid.com.sg
Taiwan Tel: +886(2) 2698-9888 email: sales@aavid.com.tw

1



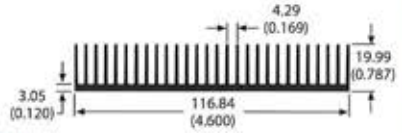
82070 6.7 lb/ft 0.84 °C/W/3in Per.=82.93

2



83250 2.9 lb/ft 0.78 °C/W/3in Per.=89.26

3



74535 1.8 lb/ft 1.55 °C/W/3in Per.=45.22

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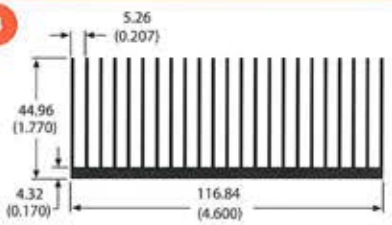

78440 3.1 lb/ft 0.84 °C/W/3in Per.=82.95

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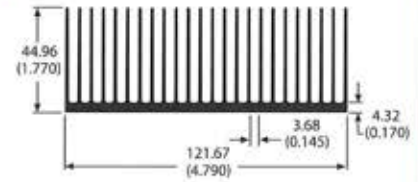
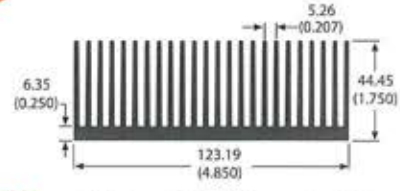


74925 3.4 lb/ft 0.82 °C/W/3in Per.=85.37

6



82030 5.2 lb/ft 0.87 °C/W/3in Per.=80.42

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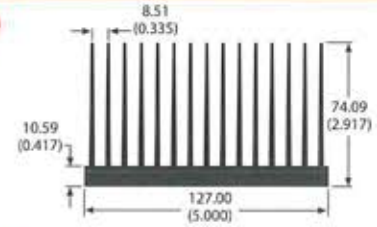

82525 6.3 lb/ft 0.83 °C/W/3in Per.=84.44

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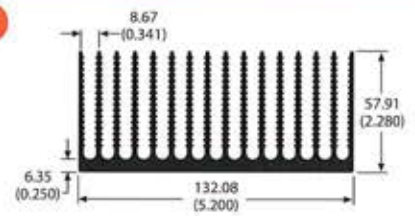
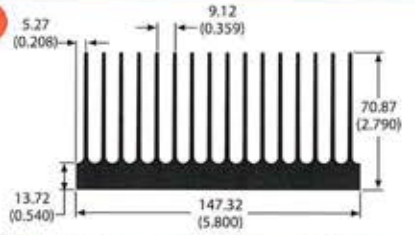


82260 5.8lb/ft 0.78 °C/W/3in Per.=89.84

9



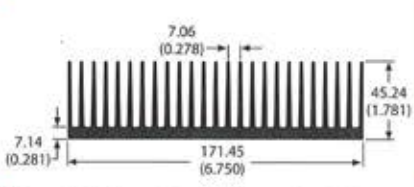
82395 7.5 lb/ft 0.85 °C/W/3in Per.=82.08

Rapid Prototype Creation

Companies turn to Aavid Thermalloy when they need a quick turnaround on short run thermal components for product design verification and pre-production launch programs.

We are ready to help when there is a need for quick turnaround on short run thermal components for product design verification and pre-production launch programs.

10



79435 6.7 lb/ft 0.81 °C/W/3in Per.=86.29

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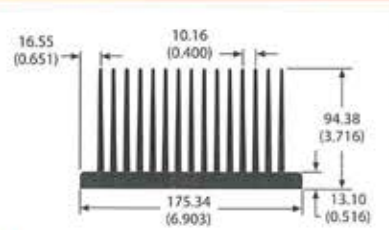

83255 11.1 lb/ft 0.64 °C/W/3in Per.=109.48

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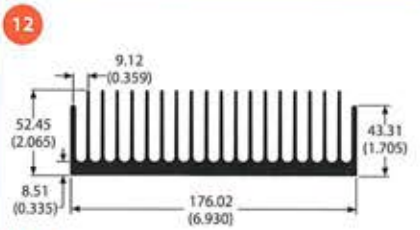
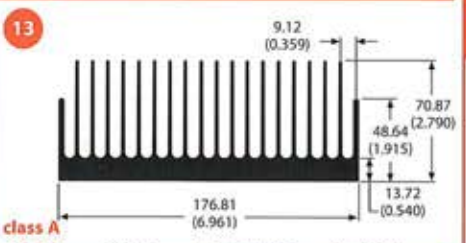


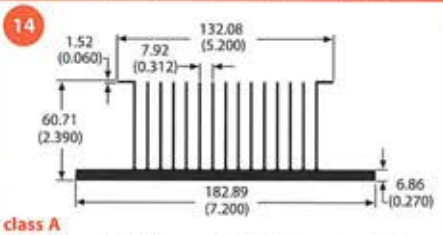
74860 6.4 lb/ft 0.88 °C/W/3in Per.=79.19

13



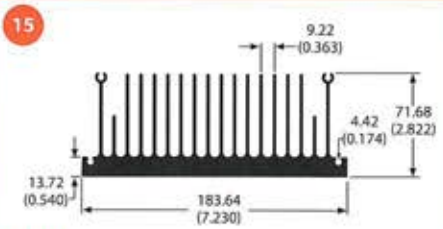
class A
65605 9.0lb/ft 0.71 °C/W/3in Per.=98.35

14



class A
62625 4.5 lb/ft 0.89 °C/W/3in Per.=78.20

15

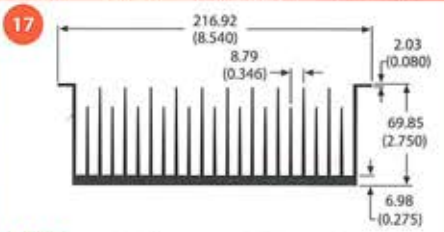


76560 8.7 lb/ft 0.76 °C/W/3in Per.=91.74

16

82160 9.0 lb/ft 0.48°C/W/3in Per.=145.02

17



76370 7.0 lb/ft 0.61 °C/W/3in Per.=114.04

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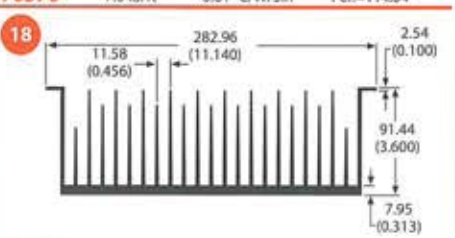
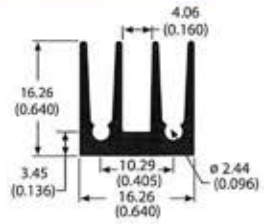


76375 10.6 lb/ft 0.45 °C/W/3in Per.=153.80

Board Level – Flatback

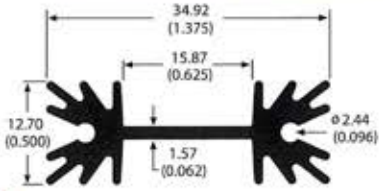
1



class A

62470	0.2 lb/ft	12.64 °C/W/3in	Per.=5.53

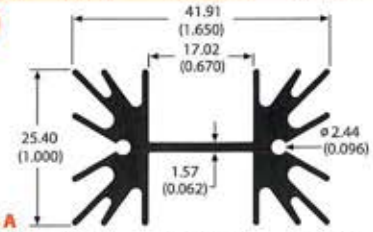
2



class A

60130	0.3 lb/ft	9.85 °C/W/3in	Per.=7.10

3



class A

63130	0.6 lb/ft	5.54 °C/W/3in	Per.=12.62

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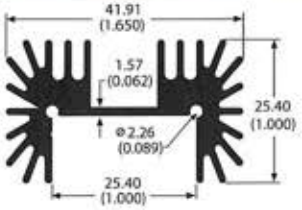
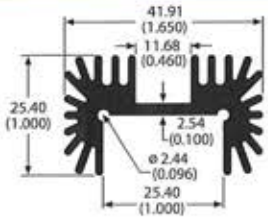


class A

78915	0.7 lb/ft	5.09 °C/W/3in	Per.=13.75

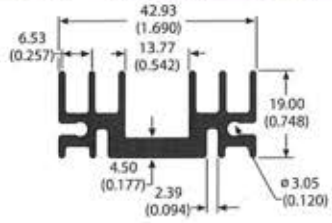
5



class A

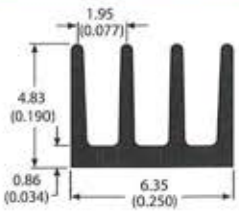
63485	0.8 lb/ft	5.56 °C/W/3in	Per.=12.57

6



63075	0.6 lb/ft	6.55 °C/W/3in	Per.=10.68

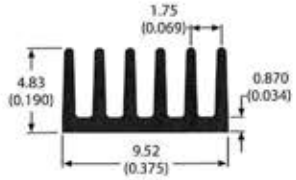
7



class A

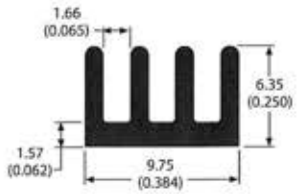
61565	0.1 lb/ft	40.42 °C/W/3in	Per.=1.73

8



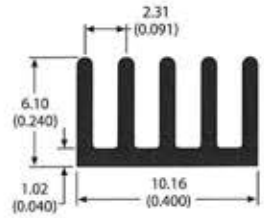
80455	0.1 lb/ft	27.50 °C/W/3in	Per.=2.54

9



82290	0.1 lb/ft	30.53 °C/W/3in	Per.=2.29

10



69065	0.1 lb/ft	25.23 °C/W/3in	Per.=2.77

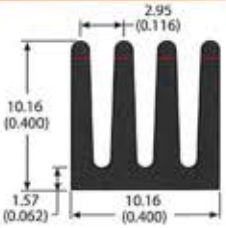
KEY

lb/ft = Weight per foot in pounds

°C/W/3in = Natural convection thermal resistance for a black anodized, 3 inch cut length

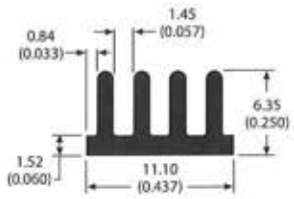
Per. = Perimeter in inches

11



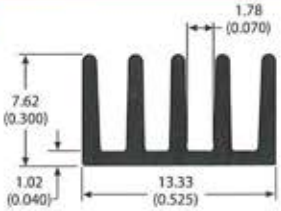
70920	0.1 lb/ft	20.43 °C/W/3in	Per.=3.42

12



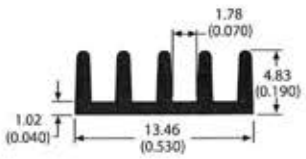
68265	0.1 lb/ft	29.13 °C/W/3in	Per.=2.40

13



74910	0.1 lb/ft	19.69 °C/W/3in	Per.=3.55

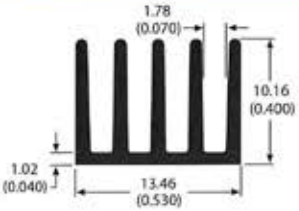
14



class A

61945	0.1 lb/ft	27.86 °C/W/3in	Per.=2.51

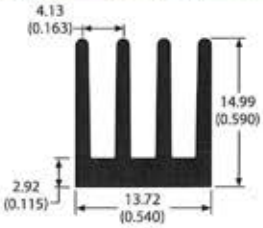
15



class A

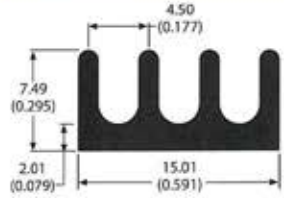
62000	0.1 lb/ft	15.30 °C/W/3in	Per.=4.57

16



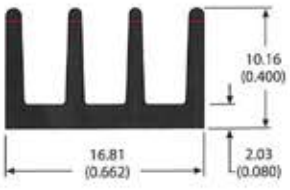
82520	0.2 lb/ft	14.11 °C/W/3in	Per.=4.96

17



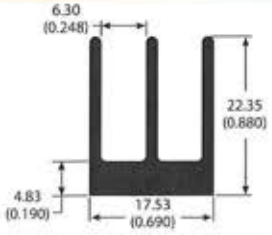
81395	0.1 lb/ft	24.85 °C/W/3in	Per.=2.81

18



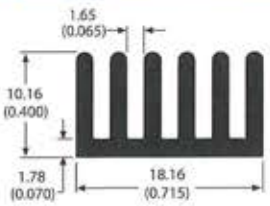
64640	0.1 lb/ft	18.07 °C/W/3in	Per.=3.87

19



63840	0.3 lb/ft	12.14 °C/W/3in	Per.=5.76

20



79265	0.2 lb/ft	13.15 °C/W/3in	Per.=5.32

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www.aavidthermalloy.com

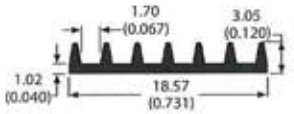
AMERICA
EUROPE

USA Tel: +1 (603) 224-9988 email: info@aavid.com
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com

ASIA

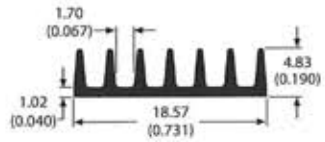
Singapore Tel: +65 6362 8388 email: sales@aavid.com.sg
Taiwan Tel: +886(2) 2698-9888 email: sales@aavid.com.tw

1



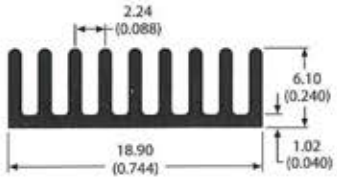
62750 0.1 lb/ft 28.66 °C/W/3in Per.=2.44

2



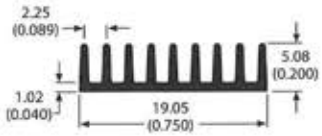
61610 0.1 lb/ft 20.81 °C/W/3in Per.=3.36

3



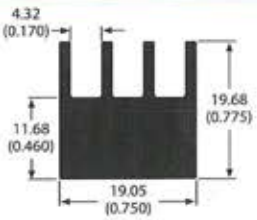
61995 0.1lb/ft 14.24 °C/W/3in Per.=4.91

4



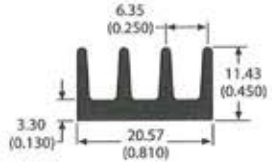
82500 0.1 lb/ft 16.70 °C/W/3in Per.=4.19

5



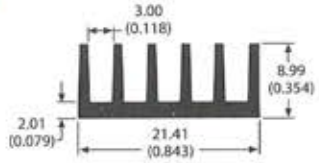
62380 0.5 lb/ft 14.42 °C/W/3in Per.=4.85

6



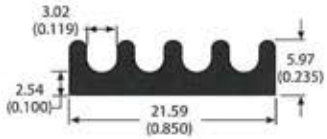
class A
61520 0.2lb/ft 16.77 °C/W/3in Per.=4.17

7



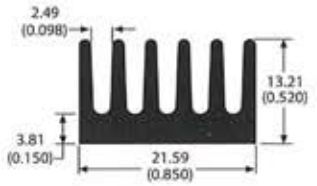
72330 0.2 lb/ft 13.94 °C/W/3in Per.=5.01

8



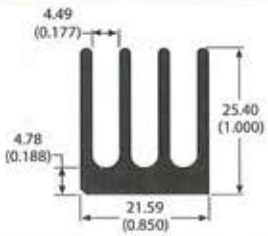
74930 0.2lb/ft 24.19 °C/W/3in Per.=2.89

9



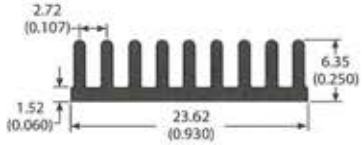
80070 0.3 lb/ft 11.62 °C/W/3in Per.=6.02

10



80235 0.5 lb/ft 8.54 °C/W/3in Per.=8.18

11



68260 0.2 lb/ft 13.64°C/W/3in Per.=5.1

Extrusion Class Definitions

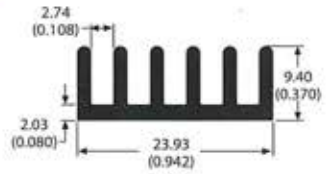
Each of our extrusions is coded with a popularity code / classification. Visit **www.aavidthermalloy.com**, go to the extrusion search tool section to view classification and current stock status.

Class A – Popular, >75% chance of some inventory available. (Coded in red lettering.)

Class B – Moderately popular material with a good chance of some inventory available.

Class C – Low demand / low usage material. Set up charge may apply at time of order if none in stock.

12



82665 0.2 lb/ft 13.17 °C/W/3in Per.=5.31

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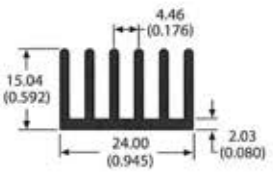

67605 0.3 lb/ft 8.74 °C/W/3in Per.=8.00

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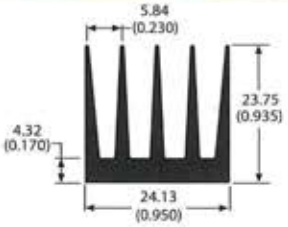
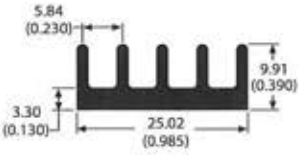


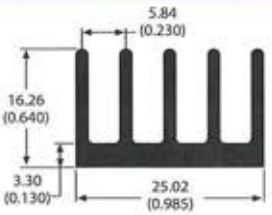
64675 0.5 lb/ft 7.40 °C/W/3in Per.=9.45

15



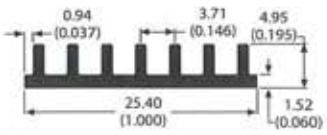
65715 0.3 lb/ft 15.23 °C/W/3in Per.=4.59

16



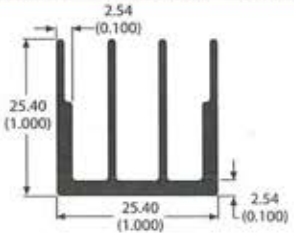
63240 0.3 lb/ft 9.86 °C/W/3in Per.=7.09

17



81405 0.1 lb/ft 17.98 °C/W/3in Per.=3.89

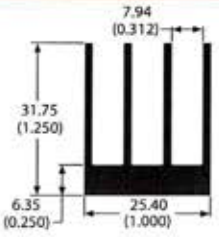
18



80765 0.4 lb/ft 7.61 °C/W/3in Per.=9.19

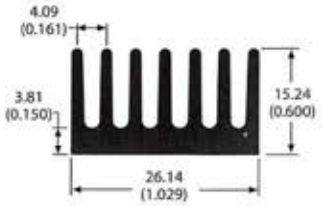
Flatback

1



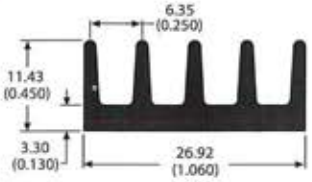
class A
62560 0.6 lb/ft 6.70 °C/W/3in Per.=10.43

2



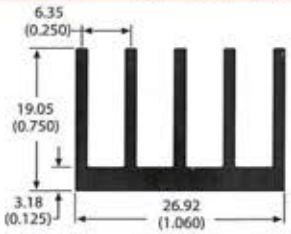
75790 0.4 lb/ft 8.56 °C/W/3in Per.=8.17

3



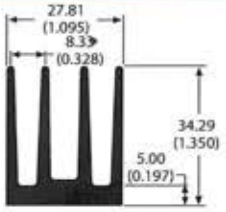
62925 0.3 lb/ft 13.37 °C/W/3in Per.=5.23

4



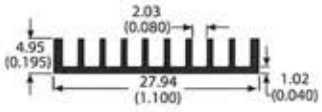
63400 0.4 lb/ft 8.19 °C/W/3in Per.=8.54

5



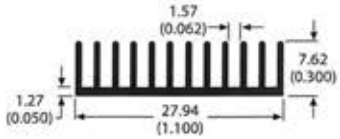
75100 0.8 lb/ft 6.21 °C/W/3in Per.=11.26

6



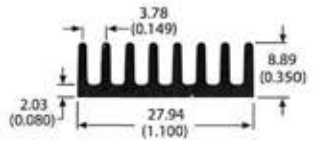
79300 0.1 lb/ft 13.19 °C/W/3in Per.=5.30

7



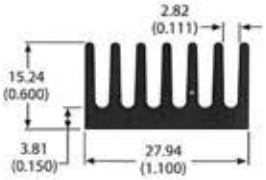
81300 0.2 lb/ft 8.61 °C/W/3in Per.=8.12

8



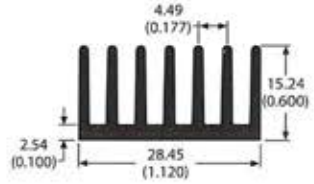
70035 0.2 lb/ft 11.19 °C/W/3in Per.=6.25

9



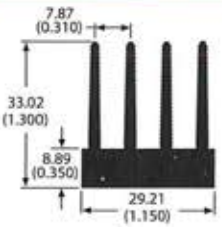
80245 0.5 lb/ft 8.46 °C/W/3in Per.=8.26

10



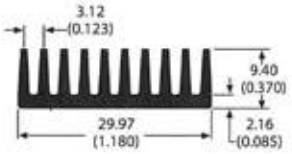
64350 0.4 lb/ft 7.69 °C/W/3in Per.=9.09

11



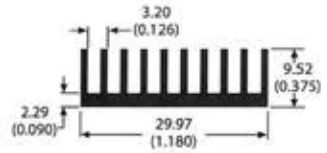
class A
62230 0.9 lb/ft 5.26 °C/W/3in Per.=13.30

12



63045 0.3 lb/ft 9.00 °C/W/3in Per.=7.77

13



82450 0.3 lb/ft 8.57 °C/W/3in Per.=8.16

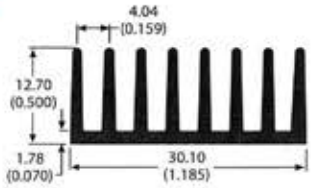
KEY

lb/ft = Weight per foot in pounds

°C/W/3in = Natural convection thermal resistance for a black anodized, 3 inch cut length

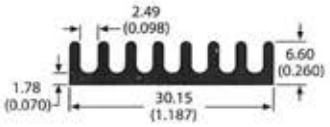
Per. = Perimeter in inches

14



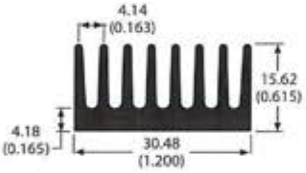
80600 0.4 lb/ft 7.73 °C/W/3in Per.=9.05

15



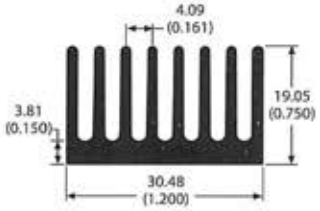
class A
63455 0.2 lb/ft 13.85 °C/W/3in Per.=5.05

16



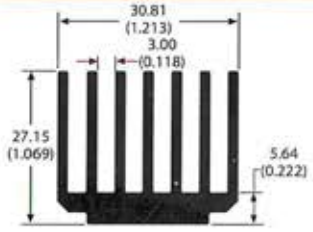
80420 0.5 lb/ft 7.49 °C/W/3in Per.=9.34

17



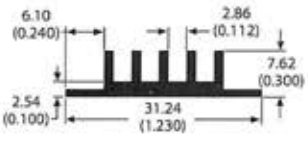
76750 0.6 lb/ft 5.95 °C/W/3in Per.=11.75

18



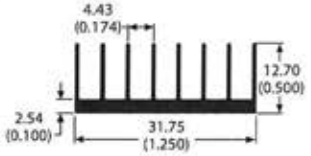
76135 0.8 lb/ft 4.85 °C/W/3in Per.=14.43

19



63300 0.2 lb/ft 15.13 °C/W/3in Per.=4.62

20



82440 0.3 lb/ft 7.85 °C/W/3in Per.=8.91

AAVID THERMALLOY
www.aavidthermalloy.com

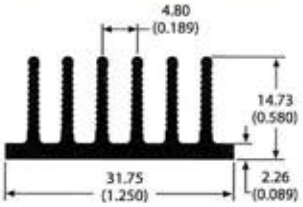
AMERICA
EUROPE

USA Tel: +1 (603) 224-9988 email: info@aavid.com
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com

ASIA

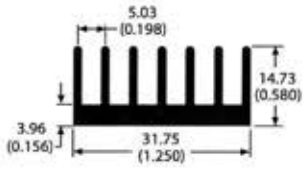
Singapore Tel: +65 6362 8388 email: sales@aavid.com.sg
Taiwan Tel: +886(2) 2698-9888 email: sales@aavid.com.tw

1



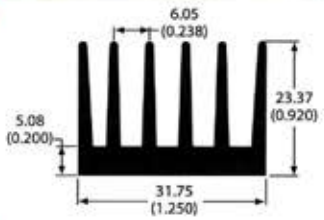
72505 0.3 lb/ft 7.63 °C/W/3in Per.=9.16

2



62035 0.4 lb/ft 8.22 °C/W/3in Per.=8.51

3



80700 0.7 lb/ft 6.31 °C/W/3in Per.=11.09

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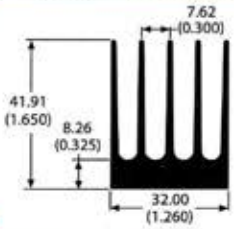
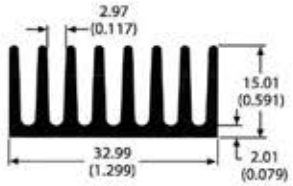


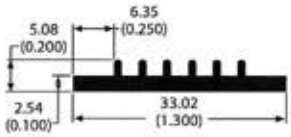
class A
65245 1.1 lb/ft 4.43 °C/W/3in Per.=15.79

5



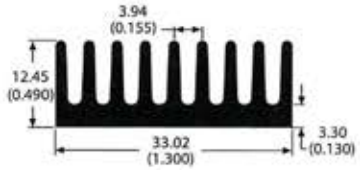
80720 0.5 lb/ft 6.81 °C/W/3in Per.=10.27

6



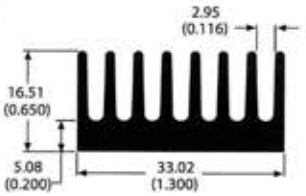
74200 0.2 lb/ft 17.95 °C/W/3in Per.=3.90

7



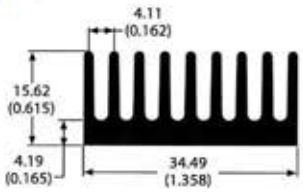
79200 0.5 lb/ft 8.05 °C/W/3in Per.=8.69

8



81130 0.6 lb/ft 7.31 °C/W/3in Per.=9.57

9

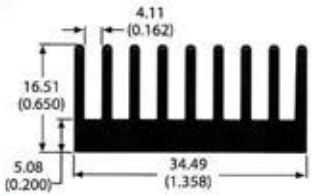


80445 0.6 lb/ft 6.61 °C/W/3in Per.=10.57

Fabrication Capabilities

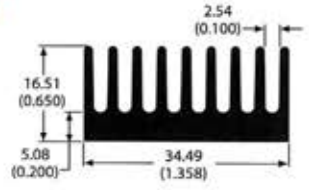
If the thermal solution requires complete fabrication of an extruded profile heat sink, Aavid Thermalloy is equipped for virtually any secondary operation. From a simple routine cut, deburr, and wash to complex milling, punching, finishing and accessory (pads, studs, etc) assembly.

10



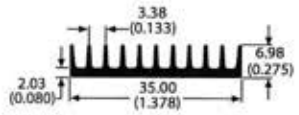
80595 0.6 lb/ft 6.38 °C/W/3in Per.=10.96

11



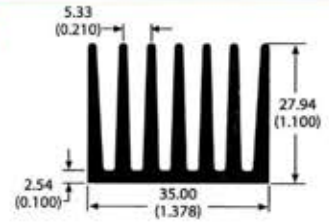
80250 0.6 lb/ft 6.61 °C/W/3in Per.=10.57

12



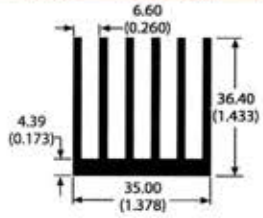
75440 0.2 lb/ft 10.52 °C/W/3in Per.=6.65

13



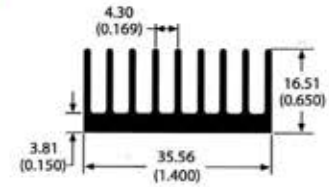
75450 0.9 lb/ft 4.31 °C/W/3in Per.=16.23

14



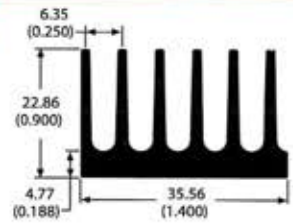
76830 0.1 lb/ft 3.85 °C/W/3in Per.=18.18

15



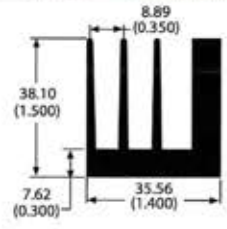
66450 0.5 lb/ft 5.98 °C/W/3in Per.=11.70

16



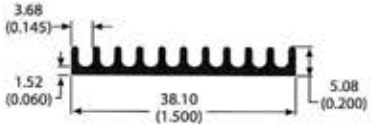
66460 0.7 lb/ft 6.30 °C/W/3in Per.=11.10

17



class A
61605 1.2 lb/ft 5.47 °C/W/3in Per.=12.78

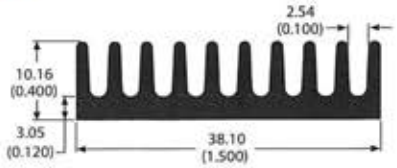
18



81065 0.2 lb/ft 12.58 °C/W/3in Per.=5.56

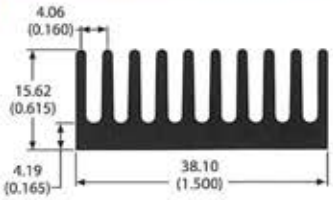
Flatback

1



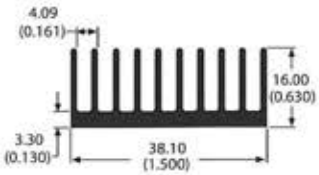
79940 0.4 lb/ft 8.63 °C/W/3in Per.=8.11

2



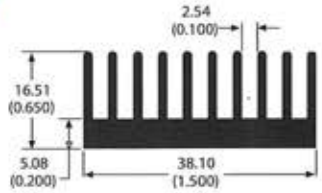
80430 0.6 lb/ft 6.01 °C/W/3in Per.=11.63

3



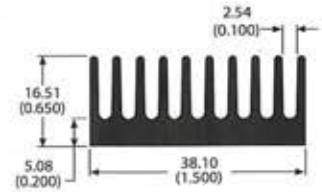
class A
66365 0.5 lb/ft 5.41 °C/W/3in Per.=12.93

4



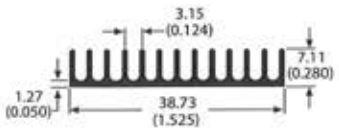
79985 0.7 lb/ft 5.76 °C/W/3in Per.=12.14

5



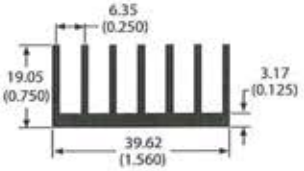
79925 0.7 lb/ft 5.98 °C/W/3in Per.=11.69

6



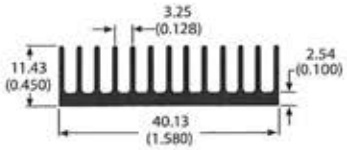
63480 0.2 lb/ft 8.23 °C/W/3in Per.=8.50

7



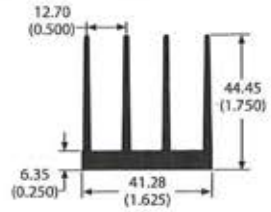
class A
61080 0.5 lb/ft 5.79 °C/W/3in Per.=12.07

8



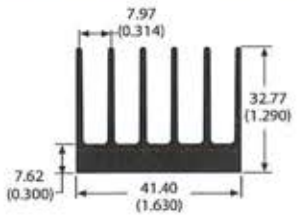
72845 0.4 lb/ft 5.86 °C/W/3in Per.=11.93

9



82420 1.0 lb/ft 4.53 °C/W/3in Per.=15.45

10



class A
61215 1.0 lb/ft 4.54 °C/W/3in Per.=15.40

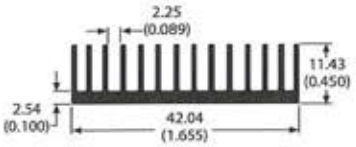
KEY

lb/ft = Weight per foot in pounds

°C/W/3in = Natural convection thermal resistance for a black anodized, 3 inch cut length

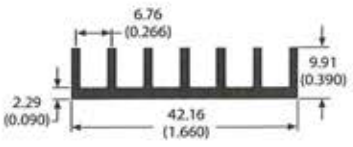
Per. = Perimeter in inches

11



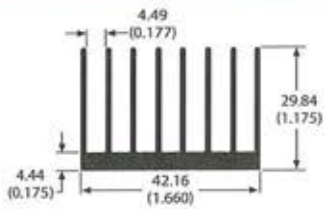
82495 0.4 lb/ft 5.35 °C/W/3in Per.=13.07

12



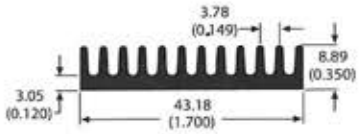
67620 0.3 lb/ft 9.14 °C/W/3in Per.=7.65

13



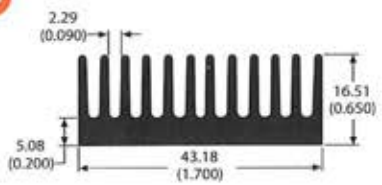
69755 0.8 lb/ft 3.60 °C/W/3in Per.=19.43

14



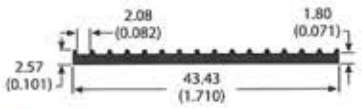
79920 0.5 lb/ft 8.38 °C/W/3in Per.=8.34

15



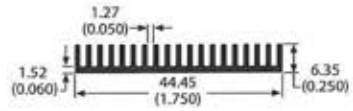
80220 0.8 lb/ft 5.07 °C/W/3in Per.=13.78

16



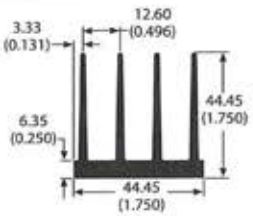
80190 0.2 lb/ft 16.96 °C/W/3in Per.=4.12

17



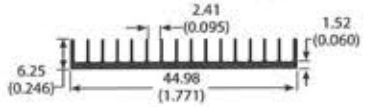
class A
65060 0.3 lb/ft 6.65 °C/W/3in Per.=10.51

18



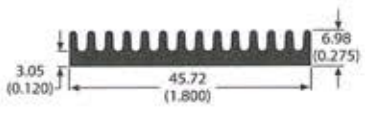
60365 1.2 lb/ft 4.51 °C/W/3in Per.=15.50

19



79955 0.2 lb/ft 7.59 °C/W/3in Per.=9.21

20



79930 0.4 lb/ft 9.51 °C/W/3in Per.=7.35

AAVID THERMALLOY
www.aavidthermalloy.com

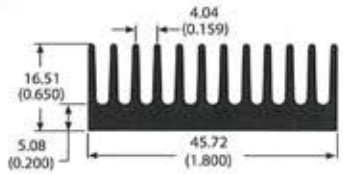
AMERICA
EUROPE

USA Tel: +1 (603) 224-9988 email: info@aavid.com
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com

ASIA

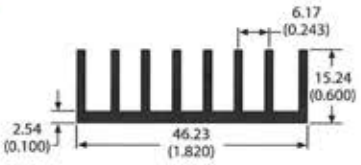
Singapore Tel: +65 6362 8388 email: sales@aavid.com.sg
Taiwan Tel: +886(2) 2698-9888 email: sales@aavid.com.tw

1



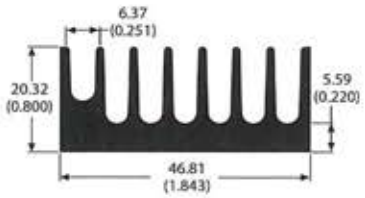
80225 0.8 lb/ft 5.03 °C/W/3in Per.=13.91

2



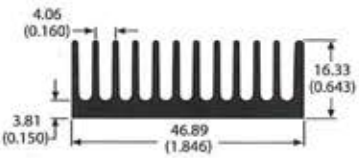
75925 0.5 lb/ft 5.97 °C/W/3in Per.=11.70

3



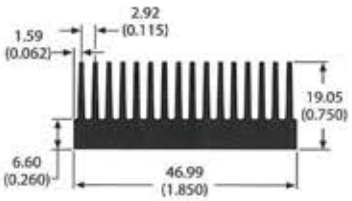
64660 0.9 lb/ft 5.73 °C/W/3in Per.=12.21

4



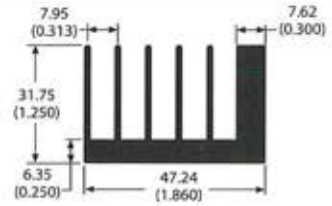
64635 0.7 lb/ft 4.67 °C/W/3in Per.=14.96

5



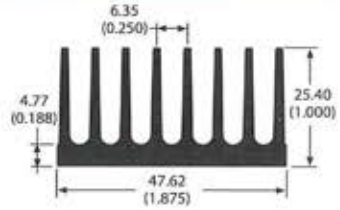
82360 1.0 lb/ft 3.62 °C/W/3in Per.=19.31

6



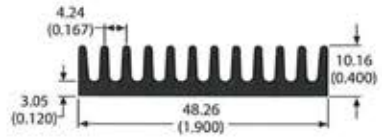
76550 1.3 lb/ft 4.36 °C/W/3in Per.=16.03

7



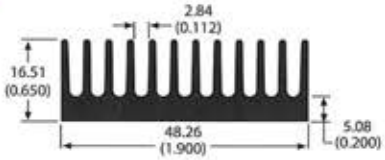
60595 1.0 lb/ft 4.30 °C/W/3in Per.=16.27

8



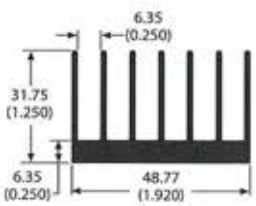
81295 0.6 lb/ft 7.12 °C/W/3in Per.=9.82

9



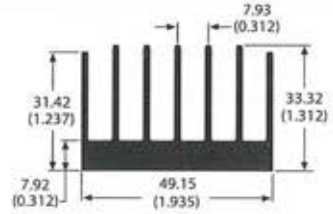
80060 0.8 lb/ft 4.96 °C/W/3in Per.=14.10

10



62745 1.1 lb/ft 3.88 °C/W/3in Per.=18.00

11



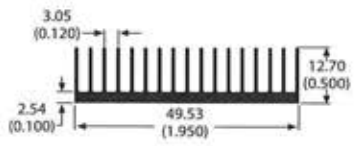
62815 1.2 lb/ft 3.91 °C/W/3in Per.=17.88

Don't see what you are looking for?

We have thousands of shapes that are not listed in this printing. We can assist you with the selection of existing profiles or with the design of new profiles.

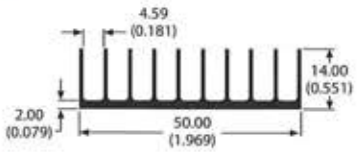
Should you require a new custom design, since there is only a nominal engineering service charge for the design and tooling of new extrusion dies, customers with challenging applications often select a new design rather than choose an existing profile.

12



82435 0.5 lb/ft 4.06 °C/W/3in Per.=17.21

13



82715 0.4 lb/ft 5.28 °C/W/3in Per.=13.24

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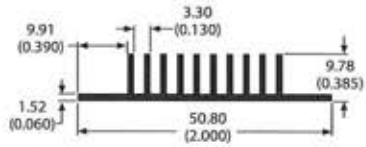
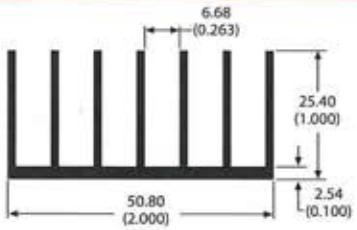


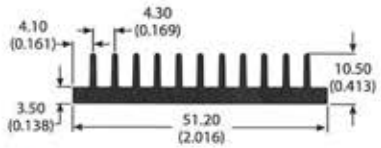
82460 0.3 lb/ft 6.64 °C/W/3in Per.=10.53

15



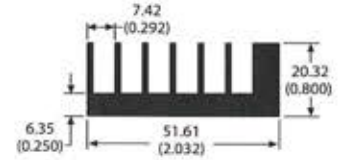
72930 0.7 lb/ft 4.16 °C/W/3in Per.=16.80

16



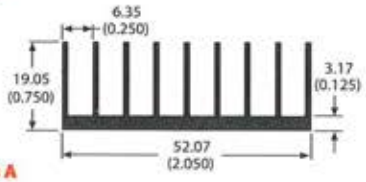
82635 0.5 lb/ft 7.03 °C/W/3in Per.=9.94

17



62935 1.0 lb/ft 5.70 °C/W/3in Per.=12.26

18



class A
65250 0.6 lb/ft 4.53 °C/W/3in Per.=15.45

Flatback

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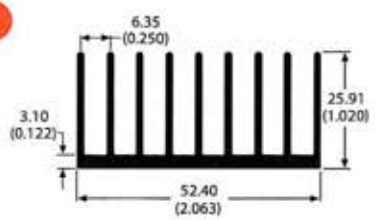
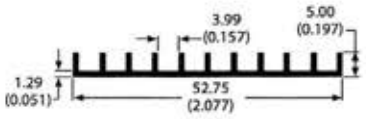


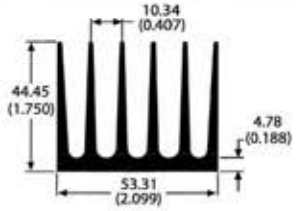
63120 0.9 lb/ft 3.46 °C/W/3in Per.=20.22

2



74815 0.2 lb/ft 9.61 °C/W/3in Per.=7.27

3



80825 1.7 lb/ft 3.16 °C/W/3in Per.=22.13

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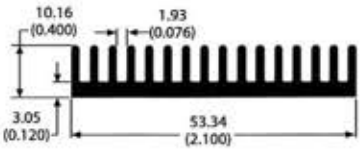
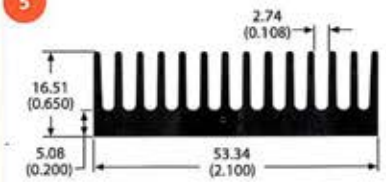


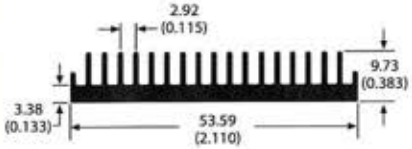
80670 0.6 lb/ft 5.44 °C/W/3in Per.=12.86

5



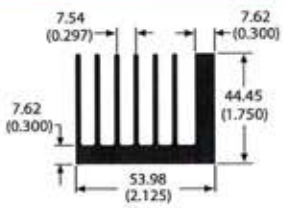
80120 0.9 lb/ft 4.31 °C/W/3in Per.=16.21

6



82755 0.5 lb/ft 5.42 °C/W/3in Per.=12.90

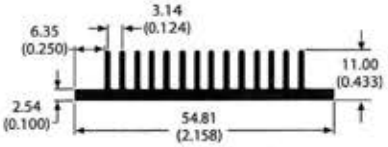
7



class A

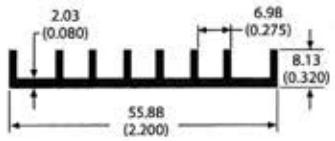
63135 2.1 lb/ft 2.82 °C/W/3in Per.=24.78

8



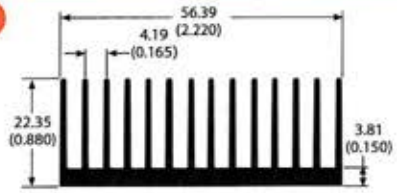
81085 0.5 lb/ft 5.21 °C/W/3in Per.=13.42

9



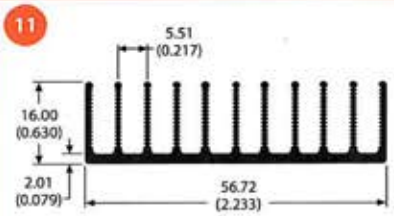
66730 0.3 lb/ft 8.38 °C/W/3in Per.=8.34

10



74455 1.0 lb/ft 2.84 °C/W/3in Per.=24.66

11



78830 0.5 lb/ft 3.17 °C/W/3in Per.=22.06

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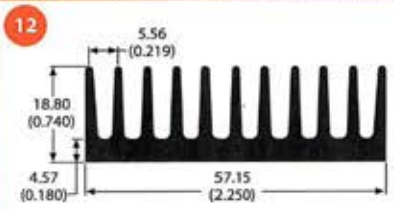
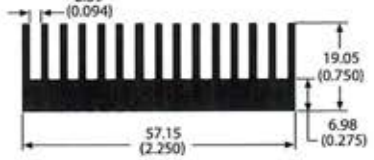


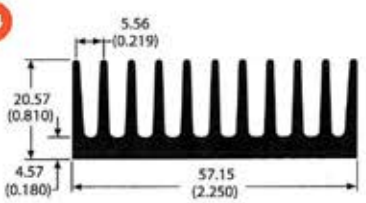
79820 1.0 lb/ft 4.35 °C/W/3in Per.=16.06

13



75625 1.2 lb/ft 3.67 °C/W/3in Per.=19.05

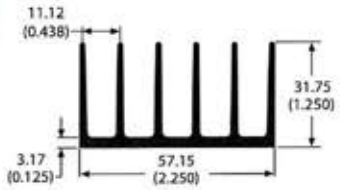
14



class A

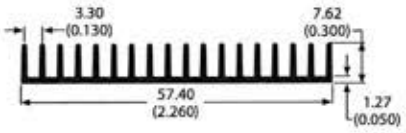
64690 1.1 lb/ft 3.97 °C/W/3in Per.=17.60

15



61460 0.9 lb/ft 3.96 °C/W/3in Per.=17.67

16



80615 0.4 lb/ft 5.34 °C/W/3in Per.=13.11

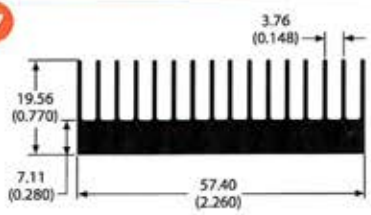
KEY

lb/ft = Weight per foot in pounds

°C/W/3in = Natural convection thermal resistance for a black anodized, 3 inch cut length

Per. = Perimeter in inches

17



76670 1.1 lb/ft 3.46 °C/W/3in Per.=20.20

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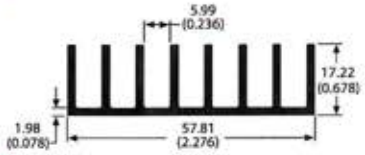
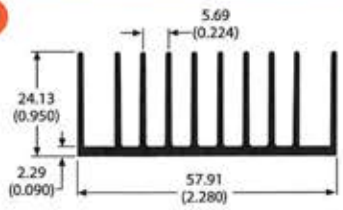


class A

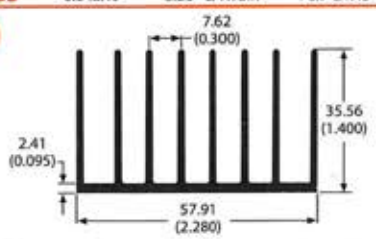
60975 0.7 lb/ft 4.95 °C/W/3in Per.=14.12

19



78735 0.8 lb/ft 3.26 °C/W/3in Per.=21.45

20



81915 1.0 lb/ft 2.77 °C/W/3in Per.=25.21

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AMERICA
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USA Tel: +1 (603) 224-9988 email: info@aavid.com
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com

ASIA

Singapore Tel: +65 6362 8388 email: sales@aavid.com.sg
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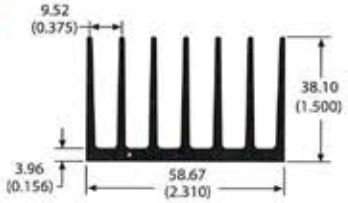
1



62500 1.3 lb/ft 3.04 °C/W/3in Per.=22.98

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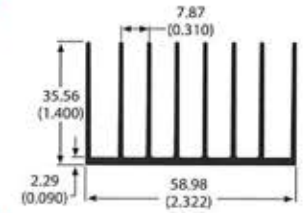

78670 0.9 lb/ft 2.75 °C/W/3in Per.=25.40

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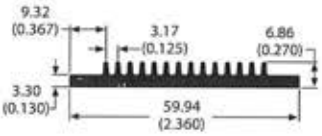
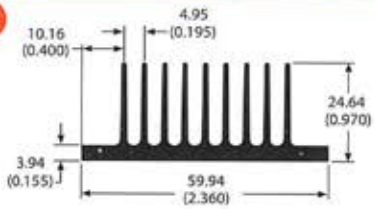


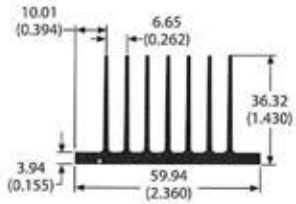
70685 0.5 lb/ft 8.60 °C/W/3in Per.=8.13

4



70675 1.0 lb/ft 3.70 °C/W/3in Per.=18.88

5



70690 1.1 lb/ft 3.15 °C/W/3in Per.=22.23

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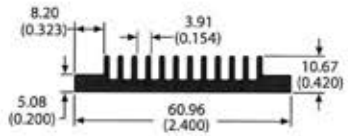
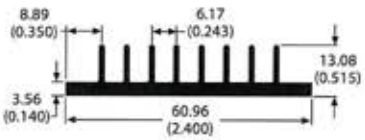


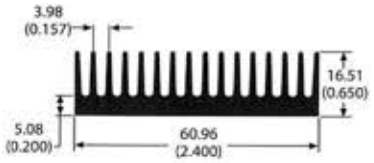
66000 0.7 lb/ft 6.33 °C/W/3in Per.=11.05

7



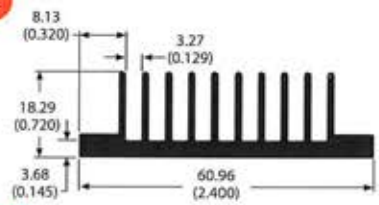
66385 0.6 lb/ft 6.47 °C/W/3in Per.=10.81

8



82675 1.1 lb/ft 3.80 °C/W/3in Per.=18.39

9



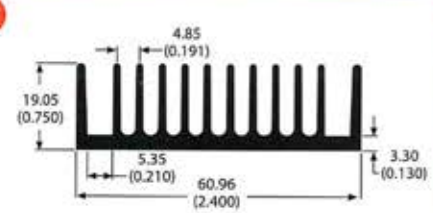
65795 0.8 lb/ft 4.32 °C/W/3in Per.=16.18

Rapid Prototype Creation

Companies turn to Aavid Thermalloy when they need a quick turnaround on short run thermal components for product design verification and pre-production launch programs.

We are ready to help when there is a need for quick turnaround on short run thermal components for product design verification and pre-production launch programs.

10



79945 1.0 lb/ft 3.68 °C/W/3in Per.=19.02

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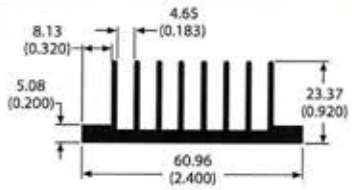
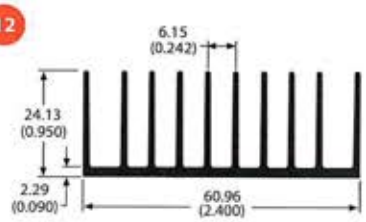


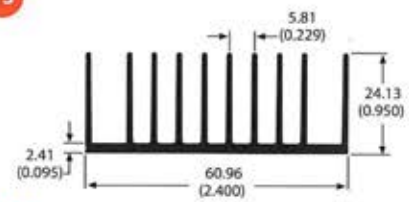
65550 0.9 lb/ft 4.06 °C/W/3in Per.=17.22

12



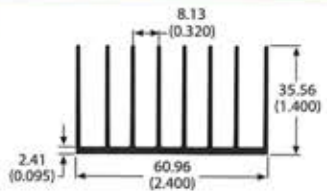
78590 0.8 lb/ft 3.23 °C/W/3in Per.=21.63

13



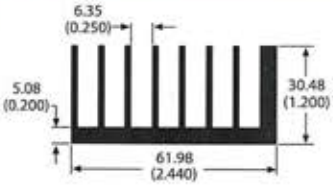
81895 0.8 lb/ft 3.24 °C/W/3in Per.=21.59

14



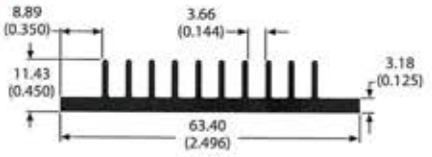
81910 0.9 lb/ft 2.74 °C/W/3in Per.=25.48

15



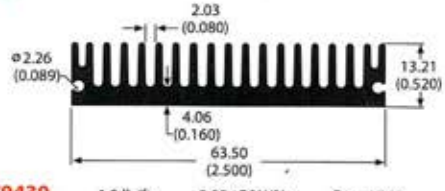
65490 1.4 lb/ft 3.32 °C/W/3in Per.=21.07

16



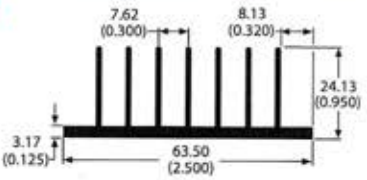
79255 0.6 lb/ft 6.18 °C/W/3in Per.=11.31

17



79430 1.0 lb/ft 3.98 °C/W/3in Per.=17.58

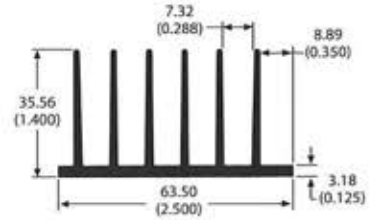
18



78550 0.8 lb/ft 4.21 °C/W/3in Per.=16.62

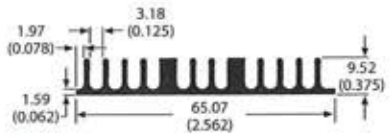
Flatback

1



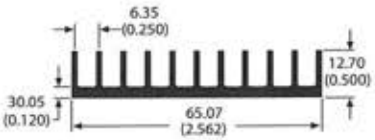
80325 1.0 lb/ft 3.48 °C/W/3in Per.=20.12

2



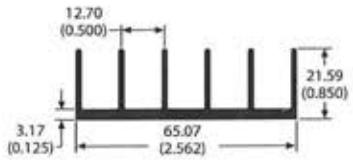
60490 0.5 lb/ft 5.19 °C/W/3in Per.=13.46

3



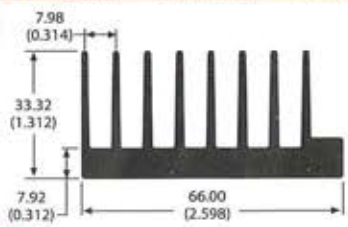
65035 0.7 lb/ft 5.16 °C/W/3in Per.=13.55

4



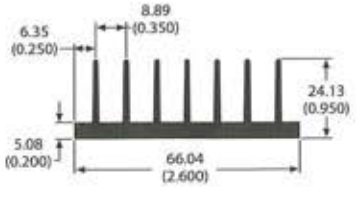
61555 0.7 lb/ft 5.07 °C/W/3in Per.=13.79

5



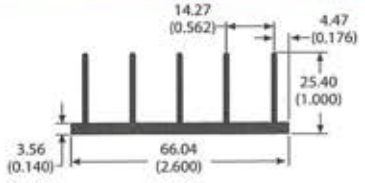
75985 1.7 lb/ft 3.31 °C/W/3in Per.=21.14

6



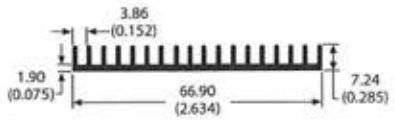
67835 1.0 lb/ft 4.45 °C/W/3in Per.=15.72

7



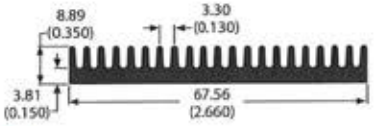
61680 0.7 lb/ft 5.03 °C/W/3in Per.=13.89

8



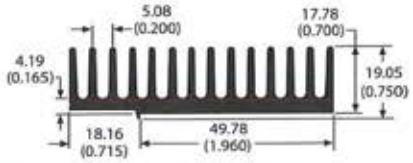
68145 0.4 lb/ft 5.65 °C/W/3in Per.=12.37

9



81965 0.8 lb/ft 5.48 °C/W/3in Per.=12.76

10



70945 1.2 lb/ft 3.59 °C/W/3in Per.=19.45

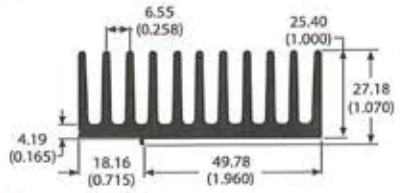
KEY

lb/ft = Weight per foot in pounds

°C/W/3in = Natural convection thermal resistance for a black anodized, 3 inch cut length

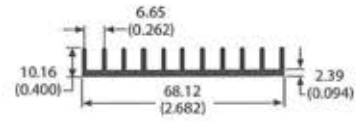
Per. = Perimeter in inches

11



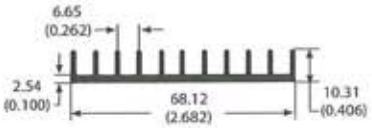
72400 1.5 lb/ft 3.04 °C/W/3in Per.=22.97

12



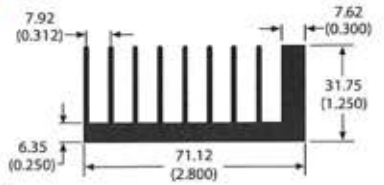
60955 0.5 lb/ft 5.87 °C/W/3in Per.=11.91

13



62180 0.6 lb/ft 5.95 °C/W/3in Per.=11.75

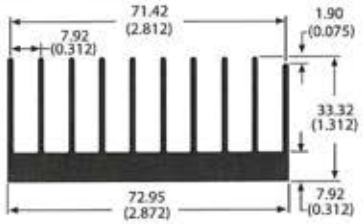
14



class A

61895 1.7 lb/ft 2.94 °C/W/3in Per.=23.82

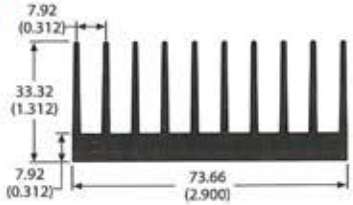
15



class A

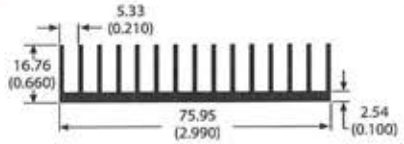
62600 1.7 lb/ft 2.70 °C/W/3in Per.=25.85

16



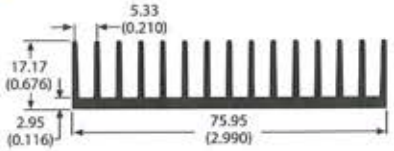
80630 1.9 lb/ft 2.71 °C/W/3in Per.=25.80

17



66675 0.8 lb/ft 3.06 °C/W/3in Per.=22.90

18



80655 1.0 lb/ft 3.12 °C/W/3in Per.=22.43

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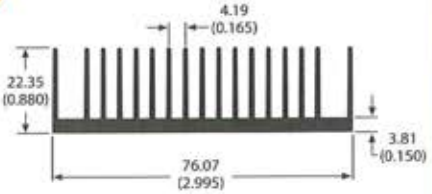
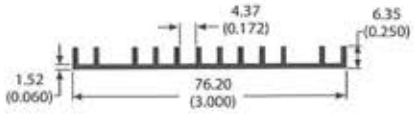


74415 1.2 lb/ft 2.29 °C/W/3in Per.=30.47

20



77170 0.4 lb/ft 6.60 °C/W/3in Per.=10.59

AAVID THERMALLOY
www.aavidthermalloy.com

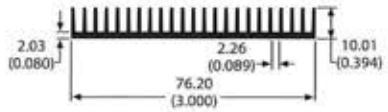
AMERICA
EUROPE

USA Tel: +1 (603) 224-9988 email: info@aavid.com
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com

ASIA

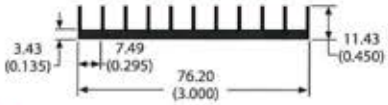
Singapore Tel: +65 6362 8388 email: sales@aavid.com.sg
Taiwan Tel: +886(2) 2698-9888 email: sales@aavid.com.tw

1



81275 0.6 lb/ft 3.49 °C/W/3in Per.=20.03

2



67260 0.7 lb/ft 5.33 °C/W/3in Per.=13.11

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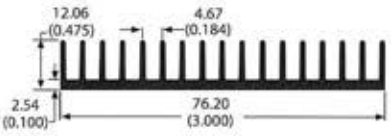
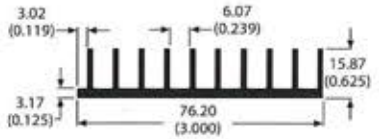


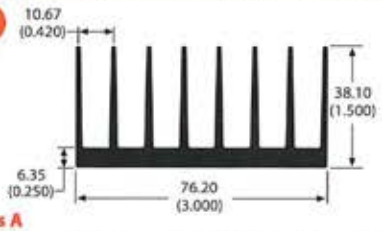
78875 0.8 lb/ft 3.82 °C/W/3in Per.=18.31

4



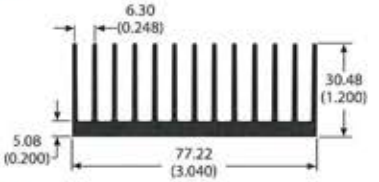
77870 0.9 lb/ft 4.35 °C/W/3in Per.=16.07

5



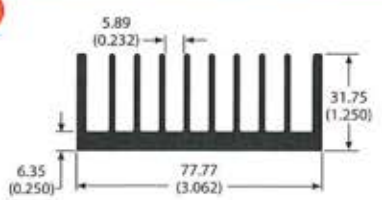
class A
64800 1.9 lb/ft 2.72 °C/W/3in Per.=25.74

6



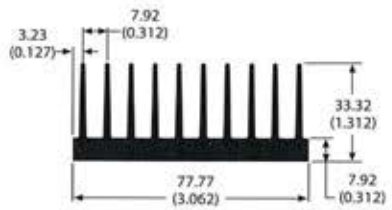
67655 1.7 lb/ft 2.21 °C/W/3in Per.=31.70

7



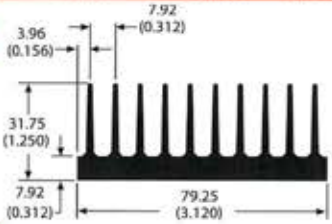
77015 1.9 lb/ft 2.67 °C/W/3in Per.=26.15

8



79975 2.0 lb/ft 2.70 °C/W/3in Per.=25.85

9



class A
61315 2.0 lb/ft 2.85 °C/W/3in Per.=24.56

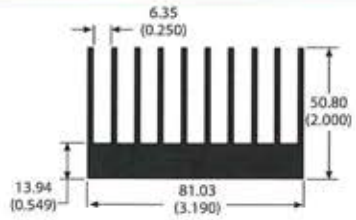
Extrusion Alloys

We use 6063-T5 aluminum, unless otherwise specified, because:

- Conducts more heat than many other aluminum alloys
- Is more easily extruded into complex shapes
- Is easily machined
- Is more readily available from many international aluminum suppliers

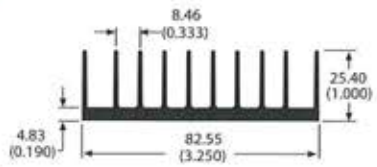
We recommend T5 hardness to minimize warping and loss of tolerance.

10



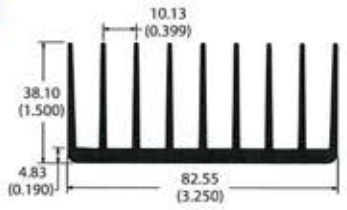
81940 3.6 lb/ft 1.92 °C/W/3in Per.=36.33

11



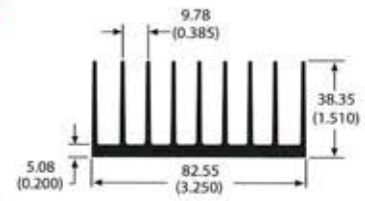
class A
60760 1.3 lb/ft 3.11 °C/W/3in Per.=22.50

12



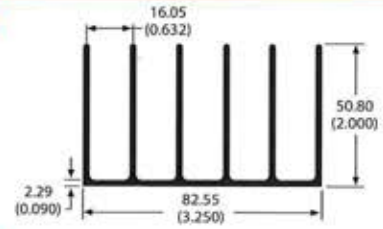
80695 1.8 lb/ft 2.35 °C/W/3in Per.=29.71

13



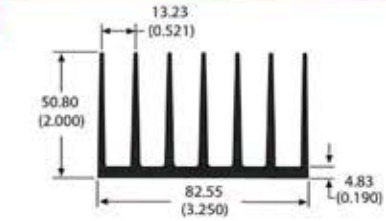
60765 1.8 lb/ft 2.35 °C/W/3in Per.=29.79

14



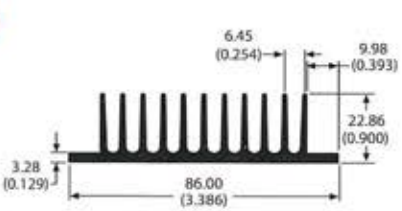
62875 1.6 lb/ft 2.41 °C/W/3in Per.=29.03

15



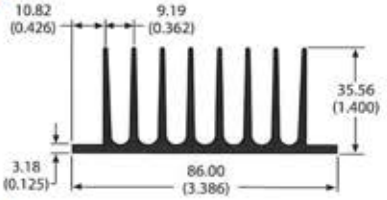
60770 2.3 lb/ft 2.23 °C/W/3in Per.=31.36

16



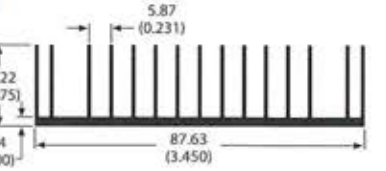
81850 1.3 lb/ft 3.08 °C/W/3in Per.=22.71

17



81855 1.6 lb/ft 2.68 °C/W/3in Per.=26.09

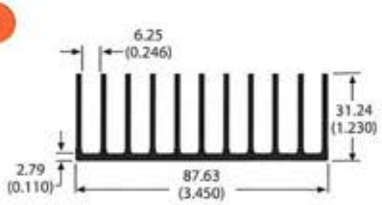
18



81525 0.9 lb/ft 2.31 °C/W/3in Per.=30.23

Flatback

1



67590 1.5 lb/ft 1.58 °C/W/3in Per.=44.36

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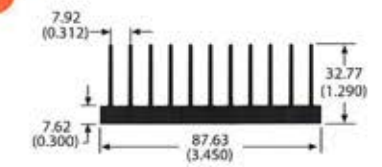

60250 2.1 lb/ft 2.43 °C/W/3in Per.=28.75

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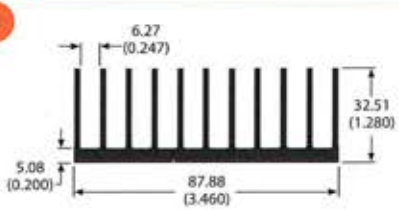
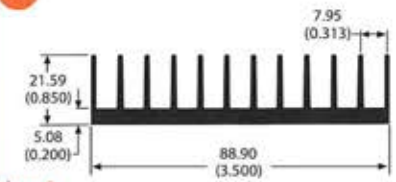


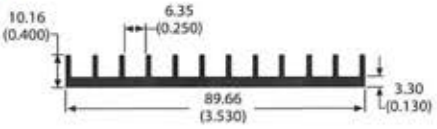
73980 1.8 lb/ft 1.59 °C/W/3in Per.=43.96

4



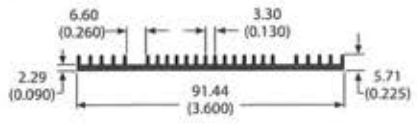
class A
62200 1.4 lb/ft 2.80 °C/W/3in Per.=24.97

5



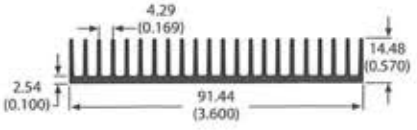
72785 0.8 lb/ft 5.18 °C/W/3in Per.=13.50

6



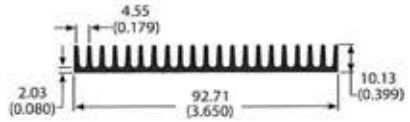
78580 0.6 lb/ft 5.36 °C/W/3in Per.=13.05

7



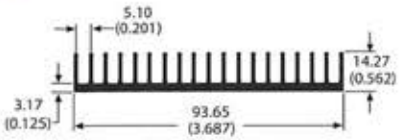
75720 1.1 lb/ft 2.60 °C/W/3in Per.=26.86

8



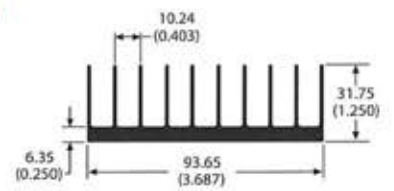
62650 0.9 lb/ft 3.66 °C/W/3in Per.=19.08

9



class A
64870 1.0 lb/ft 2.49 °C/W/3in Per.=28.09

10



60485 1.8 lb/ft 2.56 °C/W/3in Per.=27.36

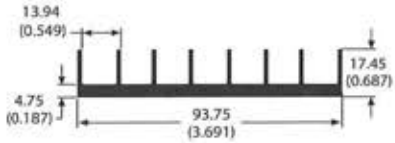
KEY

lb/ft = Weight per foot in pounds

°C/W/3in = Natural convection thermal resistance for a black anodized, 3 inch cut length

Per. = Perimeter in inches

11



82055 1.1 lb/ft 4.51 °C/W/3in Per.=15.50

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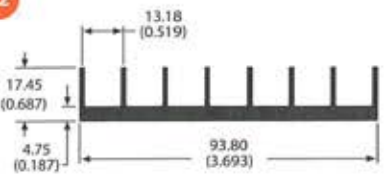
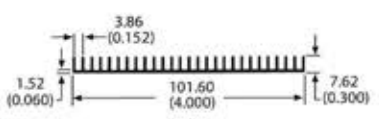


62350 1.1 lb/ft 4.49 °C/W/3in Per.=15.57

13

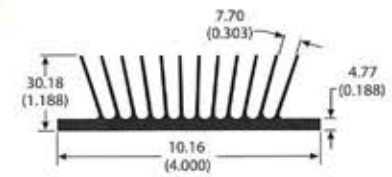
79980 1.5 lb/ft 3.18 °C/W/3in Per.=21.99

14



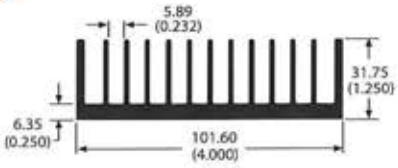
class A
61585 0.7 lb/ft 3.47 °C/W/3in Per.=20.17

15



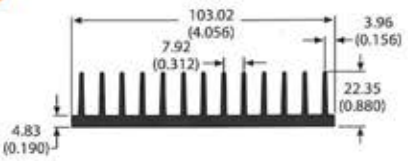
class A
60660 1.7 lb/ft 2.22 °C/W/3in Per.=31.49

16



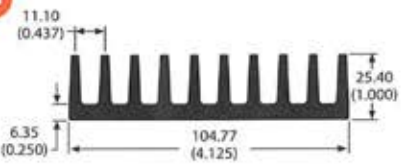
76620 2.5 lb/ft 2.06 °C/W/3in Per.=33.87

17



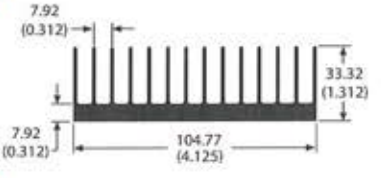
63115 1.7 lb/ft 2.76 °C/W/3in Per.=25.37

18



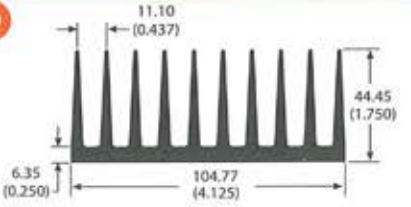
61290 2.6 lb/ft 3.11 °C/W/3in Per.=22.50

19



class A
61090 2.5 lb/ft 1.93 °C/W/3in Per.=36.15

20



class A
60095 3.4 lb/ft 1.90 °C/W/3in Per.=36.75

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www.aavidthermalloy.com

AMERICA
EUROPE
USA Tel: +1 (603) 224-9988 email: info@aavid.com
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com

ASIA
Singapore Tel: +65 6362 8388 email: sales@aavid.com.sg
Taiwan Tel: +886(2) 2698-9888 email: sales@aavid.com.tw

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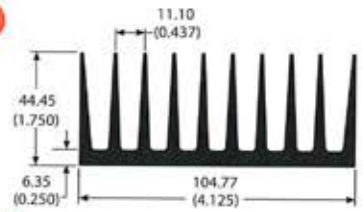

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78780 3.4 lb/ft 1.90 °C/W/3in Per.=36.78

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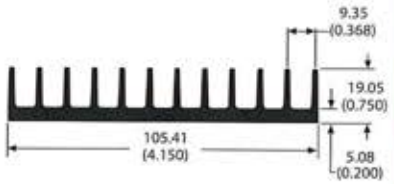

64855 1.7 lb/ft 3.35 °C/W/3in Per.=20.87

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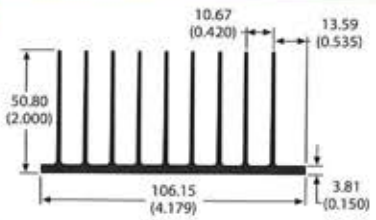
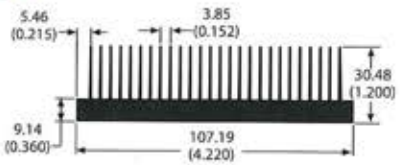


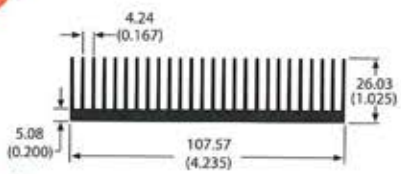
72145 2.1 lb/ft 1.70 °C/W/3in Per.=41.05

4



80350 2.9 lb/ft 1.35 °C/W/3in Per.=51.91

5



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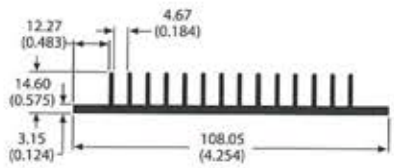
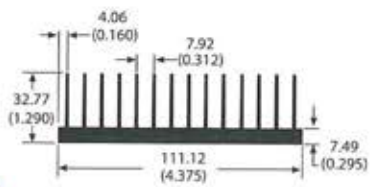
74765 2.4 lb/ft 1.38 °C/W/3in Per.=50.53

6



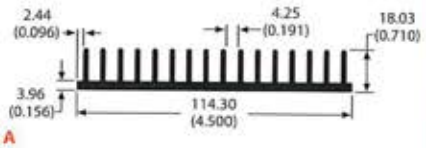
80675 1.1 lb/ft 3.35 °C/W/3in Per.=20.85

7



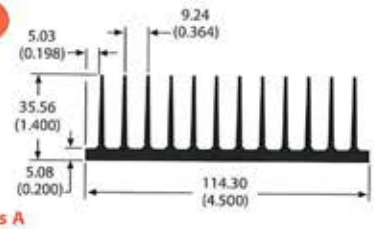
class A
60560 2.6 lb/ft 1.91 °C/W/3in Per.=36.52

8



class A
65330 1.7 lb/ft 2.66 °C/W/3in Per.=26.29

9



class A
61075 2.3 lb/ft 1.90 °C/W/3in Per.=36.83

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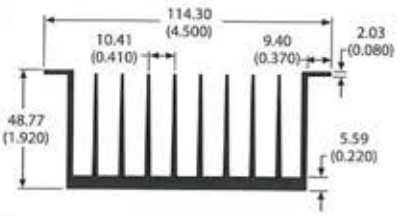
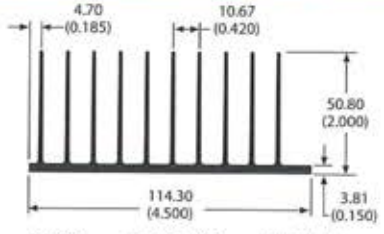


77915 2.6 lb/ft 1.67 °C/W/3in Per.=41.99

11



77290 2.3 lb/ft 1.54 °C/W/3in Per.=45.33

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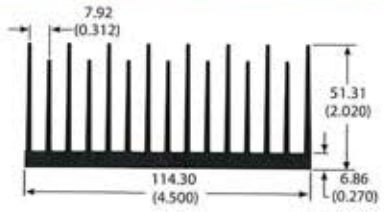

80645 3.6 lb/ft 1.23 °C/W/3in Per.=57.01

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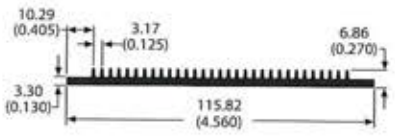
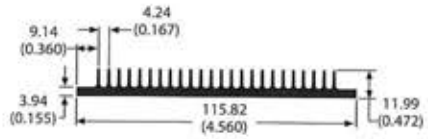


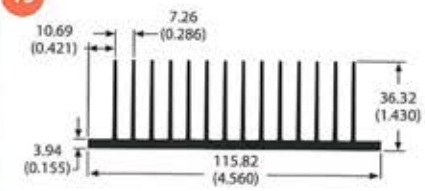
70665 1.0 lb/ft 4.27 °C/W/3in Per.=16.36

14



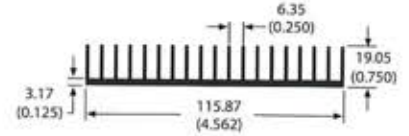
70680 1.3 lb/ft 3.07 °C/W/3in Per.=22.76

15



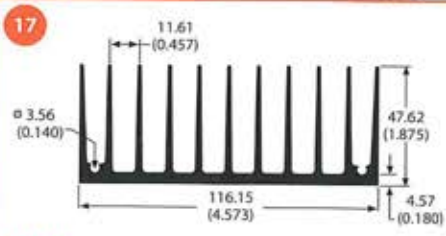
70195 2.1 lb/ft 1.58 °C/W/3in Per.=44.19

16



class A
60585 1.5 lb/ft 2.15 °C/W/3in Per.=32.46

17



70440 3.0 lb/ft 1.54 °C/W/3in Per.=45.34

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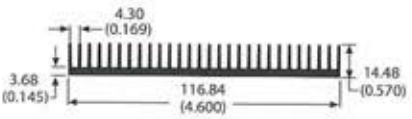


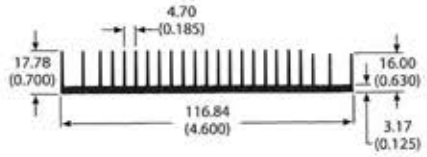
72085 1.5 lb/ft 2.20 °C/W/3in Per.=31.72

Performance vs. Length

Thermal resistance changes significantly with length. To convert published natural convection thermal resistance at a 3 inch length to a desired length, see page 16 for a length correction table.

Flatback

1



77370 1.3 lb/ft 1.96 °C/W/3in Per.=35.73

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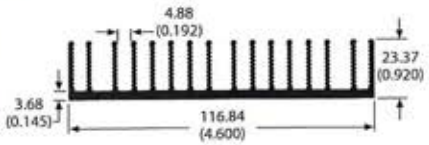

69945 1.8 lb/ft 1.78 °C/W/3in Per.=39.24

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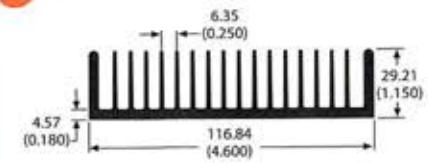

74155 2.6 lb/ft 1.61 °C/W/3in Per.=43.47

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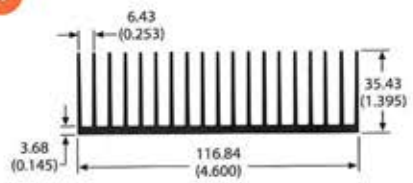

72090 2.4 lb/ft 1.25 °C/W/3in Per.=55.74

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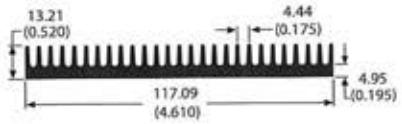

80265 1.8 lb/ft 2.81 °C/W/3in Per.=24.90

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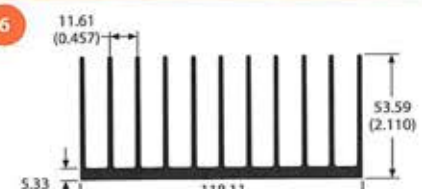

70970 3.2 lb/ft 1.38 °C/W/3in Per.=50.60

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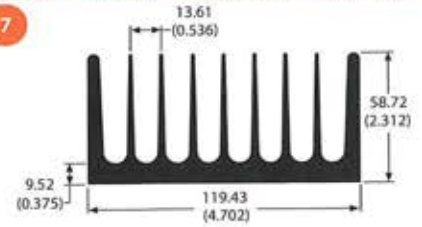
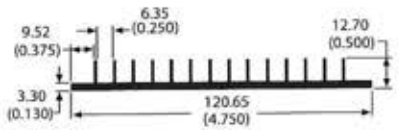


64795 5.1 lb/ft 1.64 °C/W/3in Per.=42.64

8



65350 1.0 lb/ft 3.50 °C/W/3in Per.=20.00

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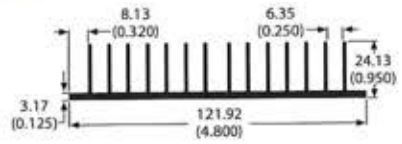

79025 1.5 lb/ft 2.15 °C/W/3in Per.=32.47

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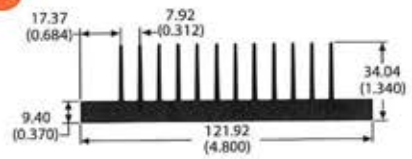


62890 3.0 lb/ft 2.14 °C/W/3in Per.=32.70

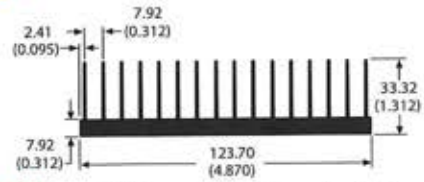
KEY

lb/ft = Weight per foot in pounds

°C/W/3in = Natural convection thermal resistance for a black anodized, 3 inch cut length

Per. = Perimeter in inches

11



62655 3.0 lb/ft 1.68 °C/W/3in Per.=41.66

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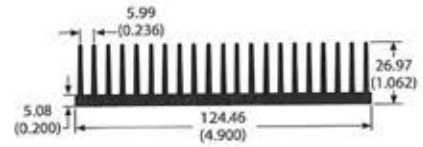

77175 2.7 lb/ft 1.55 °C/W/3in Per.=45.04

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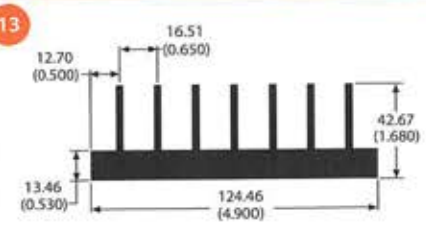

80965 4.2 lb/ft 2.61 °C/W/3in Per.=26.82

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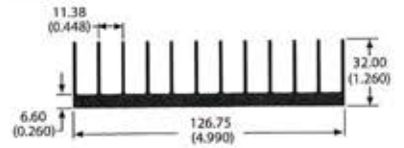
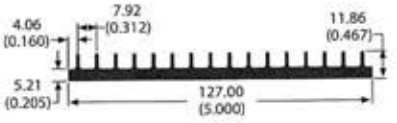


class A
61745 2.4 lb/ft 2.06 °C/W/3in Per.=33.89

15



62620 1.5 lb/ft 3.89 °C/W/3in Per.=17.97

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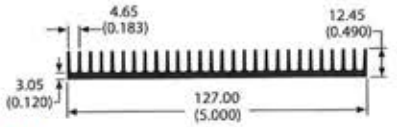

class A
67895 1.4 lb/ft 2.38 °C/W/3in Per.=29.33

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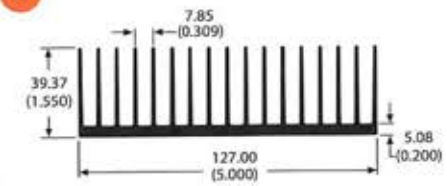

80640 3.0 lb/ft 1.27 °C/W/3in Per.=55.04

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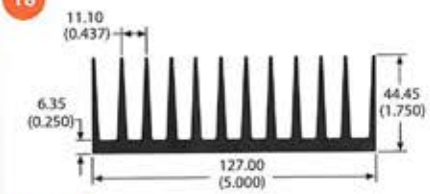
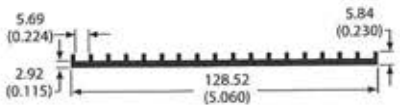


67490 3.9 lb/ft 1.57 °C/W/3in Per.=44.52

19



78570 0.8 lb/ft 4.93 °C/W/3in Per.=14.18

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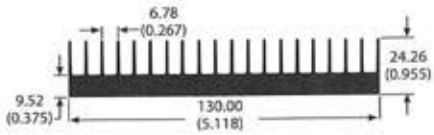


82705 2.9 lb/ft 2.12 °C/W/3in Per.=32.95

AAVID THERMALLOY
www.aavidthermalloy.com

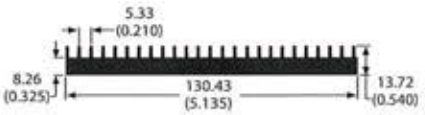
AMERICA
EUROPE

USA Tel: +1 (603) 224-9988 email: info@aavid.com
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com

ASIA

Singapore Tel: +65 6362 8388 email: sales@aavid.com.sg
Taiwan Tel: +886(2) 2698-9888 email: sales@aavid.com.tw

1



82610 2.3 lb/ft 3.28 °C/W/3in Per.=21.34

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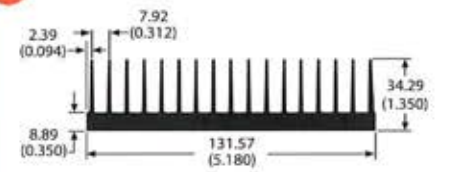

61980 3.4 lb/ft 1.60 °C/W/3in Per.=43.72

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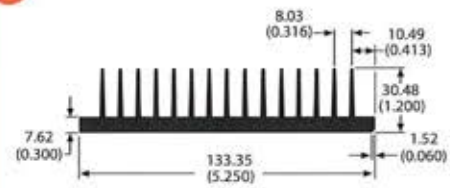

63565 3.1 lb/ft 1.89 °C/W/3in Per.=36.97

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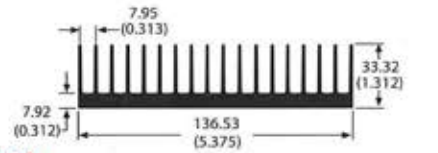
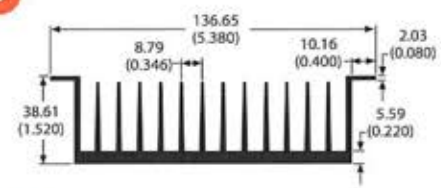


class A

61085 3.4 lb/ft 1.52 °C/W/3in Per.=46.12

5



77920 2.8 lb/ft 1.58 °C/W/3in Per.=44.23

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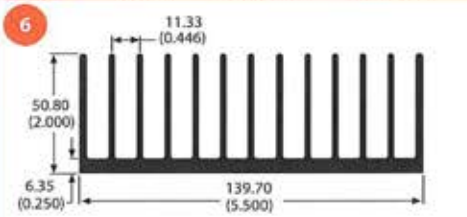
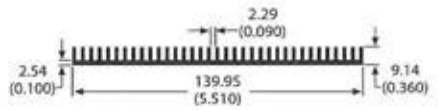


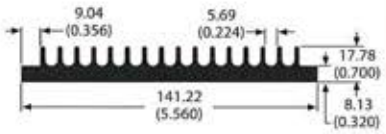
64315 4.3 lb/ft 1.25 °C/W/3in Per.=56.10

7



82595 1.4 lb/ft 2.43 °C/W/3in Per.=28.82

8



65325 2.8 lb/ft 3.21 °C/W/3in Per.=21.81

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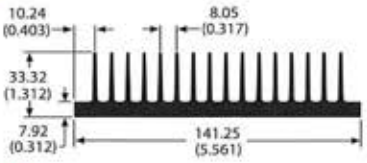
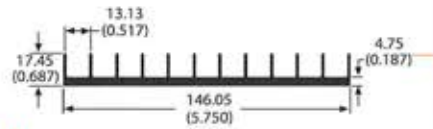


60215 3.6 lb/ft 1.68 °C/W/3in Per.=41.74

Temperature Rise Factor

Since natural convection heat sink efficiency degrades with decreasing sink-to-ambient temperature differential, a correction factor must be applied to the published data if an application requires a sink-to-ambient temperature rise of less than 75°C. See page 16 for a temperature correction table.

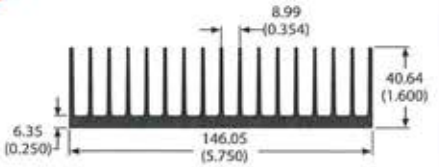
10



class A

61790 1.7 lb/ft 3.00 °C/W/3in Per.=23.28

11



76755 3.8 lb/ft 1.09 °C/W/3in Per.=64.20

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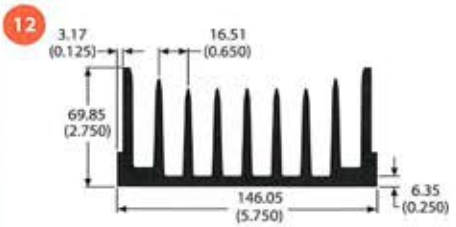

71170 6.4 lb/ft 1.44 °C/W/3in Per.=48.48

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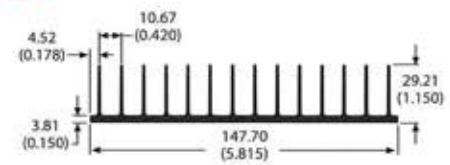

71150 2.1 lb/ft 1.81 °C/W/3in Per.=38.67

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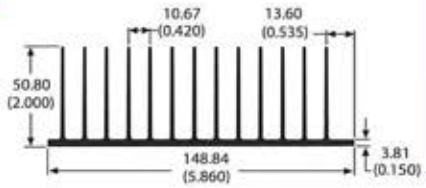

71350 3.0 lb/ft 1.19 °C/W/3in Per.=58.82

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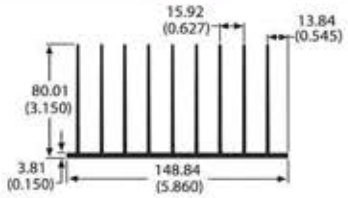
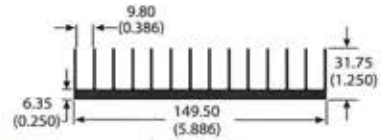


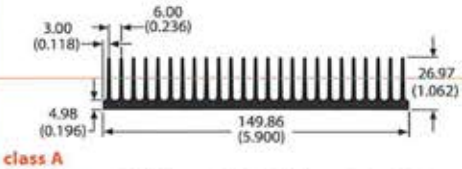
71845 3.8 lb/ft 1.07 °C/W/3in Per.=65.25

16



60230 2.7 lb/ft 1.77 °C/W/3in Per.=39.55

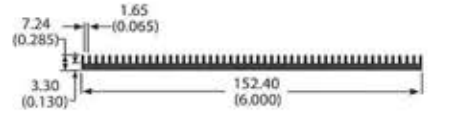
17



class A

64500 3.3 lb/ft 1.33 °C/W/3in Per.=52.60

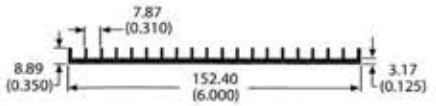
18



80710 1.4 lb/ft 2.74 °C/W/3in Per.=25.51

Flatback

1



62995 1.2 lb/ft 3.34 °C/W/3in Per.=20.92

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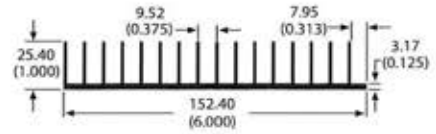

62440 1.9 lb/ft 1.76 °C/W/3in Per.=39.69

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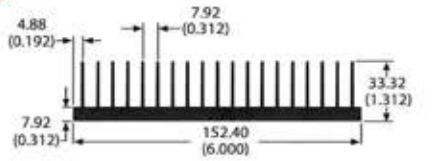

68995 3.6 lb/ft 1.41 °C/W/3in Per.=49.68

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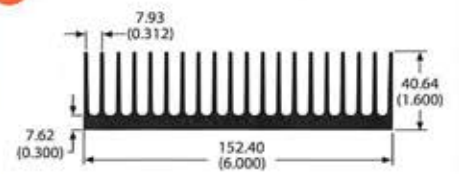

72385 4.8 lb/ft 1.13 °C/W/3in Per.=61.82

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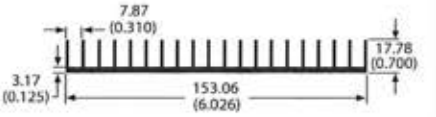

74645 1.7 lb/ft 1.98 °C/W/3in Per.=35.30

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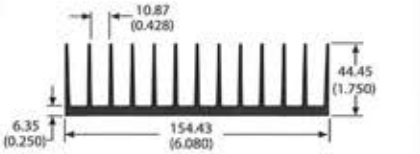
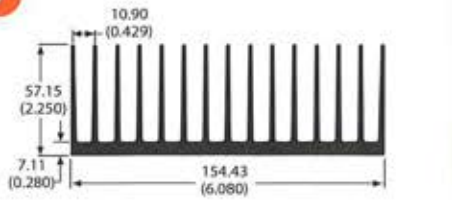


class A
60140 4.0 lb/ft 1.39 °C/W/3in Per.=50.26

7



71145 5.5 lb/ft 1.00 °C/W/3in Per.=69.93

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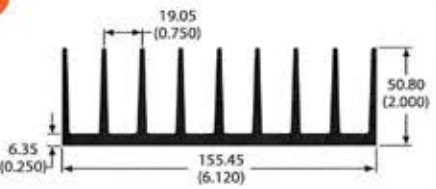

64225 4.3 lb/ft 1.64 °C/W/3in Per.=42.71

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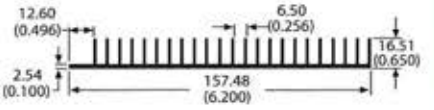

66690 1.6 lb/ft 1.85 °C/W/3in Per.=37.71

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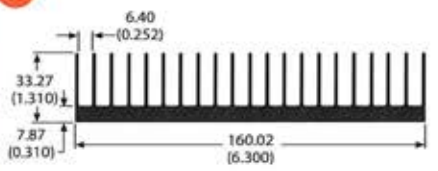

81480 3.7 lb/ft 1.30 °C/W/3in Per.=53.99

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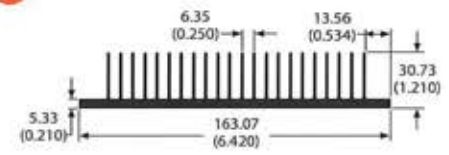
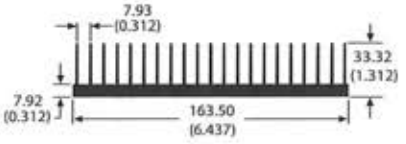


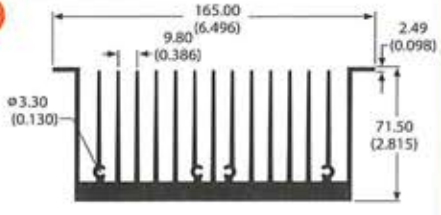
64360 3.1 lb/ft 1.24 °C/W/3in Per.=56.22

12



class A
60340 3.9 lb/ft 1.28 °C/W/3in Per.=54.48

13



75560 6.3 lb/ft 0.83 °C/W/3in Per.=84.51

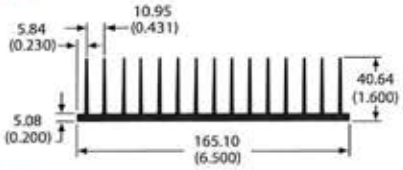
KEY

lb/ft = Weight per foot in pounds

°C/W/3in = Natural convection thermal resistance for a black anodized, 3 inch cut length

Per. = Perimeter in inches

14



61070 3.5 lb/ft 1.30 °C/W/3in Per.=53.91

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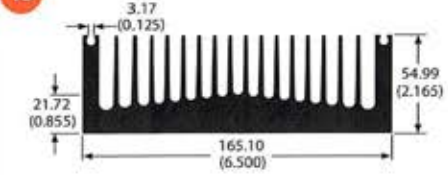

69180 9.1 lb/ft 1.07 °C/W/3in Per.=65.60

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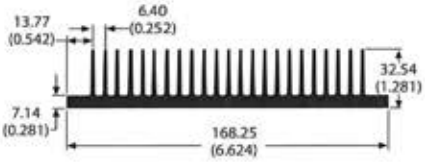
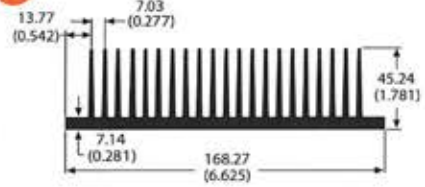


71395 4.3 lb/ft 1.21 °C/W/3in Per.=57.72

17

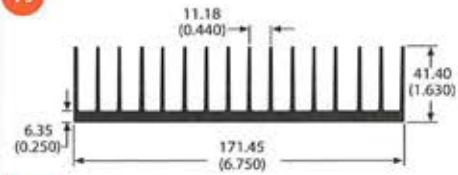


69800 5.9 lb/ft 0.94 °C/W/3in Per.=74.58

18

class A
62155 4.6 lb/ft 1.26 °C/W/3in Per.=55.49

19



class A
62285 4.0 lb/ft 1.23 °C/W/3in Per.=56.85

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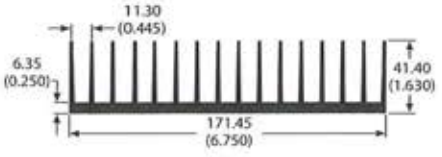


62060 4.3 lb/ft 1.23 °C/W/3in Per.=56.84

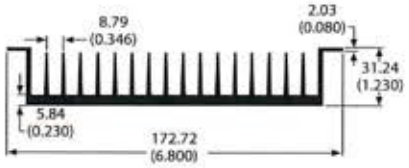
AAVID THERMALLOY
www.aavidthermalloy.com

AMERICA
USA Tel: +1 (603) 224-9988 email: info@aavid.com

EUROPE
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com

ASIA
Singapore Tel: +65 6362 8388 email: sales@aavid.com.sg
Taiwan Tel: +886(2) 2698-9888 email: sales@aavid.com.tw

1



76535 3.2 lb/ft 1.53 °C/W/3in Per.=45.58

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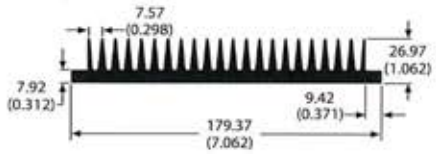

62510 5.0 lb/ft 1.60 °C/W/3in Per.=43.71

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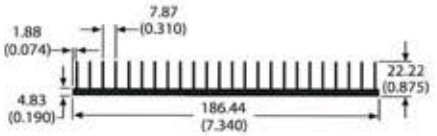

class A

61915 2.8 lb/ft 1.48 °C/W/3in Per.=47.10

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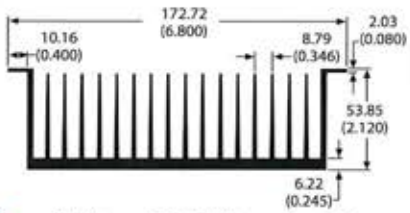

77555 4.8 lb/ft 0.91 °C/W/3in Per.=77.08

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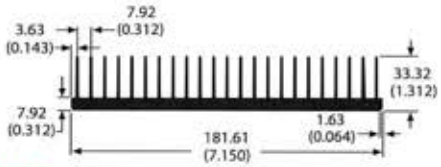

62660 4.4 lb/ft 1.18 °C/W/3in Per.=59.32

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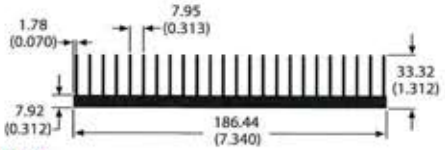

class A

65445 4.6 lb/ft 1.12 °C/W/3in Per.=62.27

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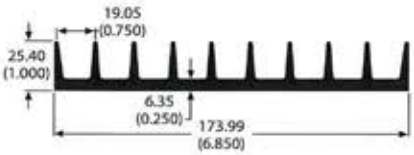


81520 3.2 lb/ft 2.55 °C/W/3in Per.=27.47

Extrusion Class Definitions

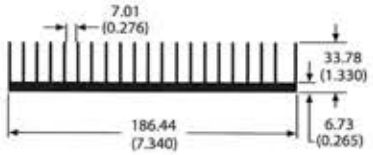
Each of our extrusions is coded with a popularity code / classification. Visit **www.aavidthermalloy.com**, go to the extrusion search tool section to view classification and current stock status.

Class A – Popular, >75% chance of some inventory available. (Coded in red lettering.)

Class B – Moderately popular material with a good chance of some inventory available.

Class C – Low demand / low usage material. Set up charge may apply at time of order if none in stock.

14



66880 4.1 lb/ft 1.18 °C/W/3in Per.=59.05

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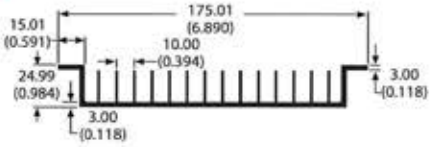

79190 1.9 lb/ft 1.85 °C/W/3in Per.=37.89

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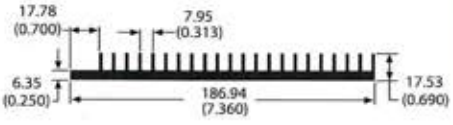

62280 3.0 lb/ft 2.06 °C/W/3in Per.=34.00

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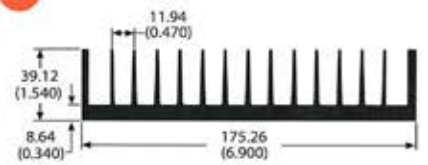
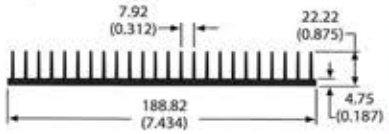


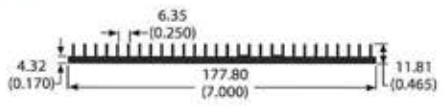
61830 4.8 lb/ft 1.42 °C/W/3in Per.=49.07

16



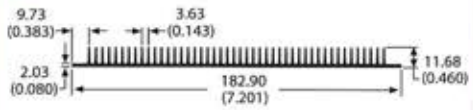
80815 3.0 lb/ft 1.50 °C/W/3in Per.=46.56

6



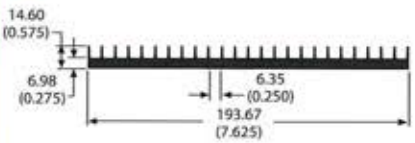
81055 2.0 lb/ft 2.18 °C/W/3in Per.=32.10

10



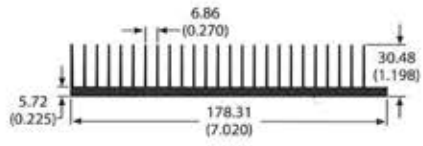
68855 1.7 lb/ft 1.51 °C/W/3in Per.=46.30

17



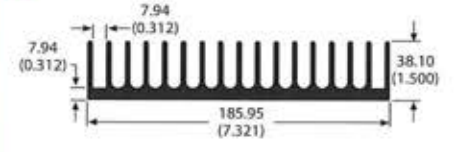
63350 3.1 lb/ft 2.38 °C/W/3in Per.=29.32

7



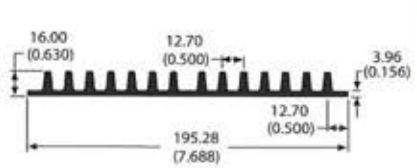
82555 3.4 lb/ft 1.12 °C/W/3in Per.=62.68

11



68780 6.0 lb/ft 1.33 °C/W/3in Per.=52.70

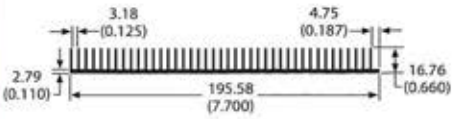
18



60910 3.0 lb/ft 2.58 °C/W/3in Per.=27.07

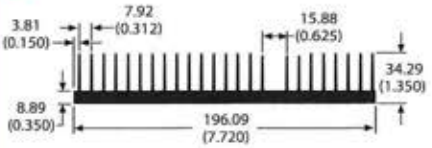
Flatback

1



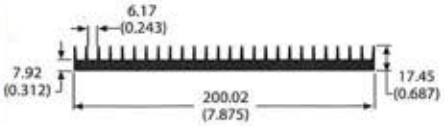
82740 | 2.6 lb/ft | 1.18 °C/W/3in | Per.=59.28

2



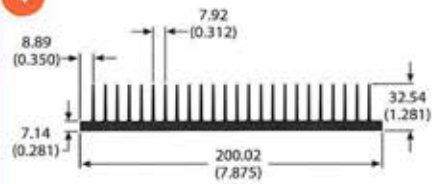
61880 | 5.1 lb/ft | 1.13 °C/W/3in | Per.=62.06

3



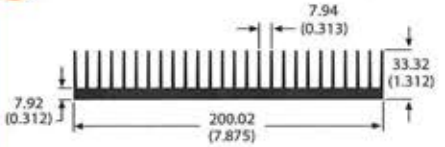
81410 | 3.7 lb/ft | 2.05 °C/W/3in | Per.=34.05

4



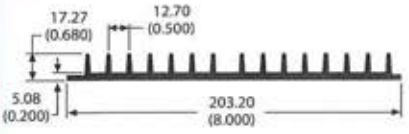
63745 | 4.6 lb/ft | 1.13 °C/W/3in | Per.=61.98

5



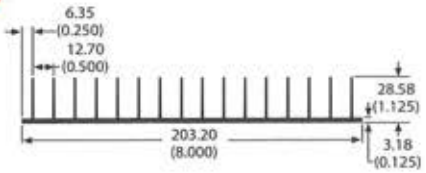
class A
63925 | 5.1 lb/ft | 1.05 °C/W/3in | Per.=66.44

6



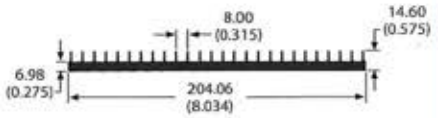
72480 | 2.9 lb/ft | 2.33 °C/W/3in | Per.=29.95

7



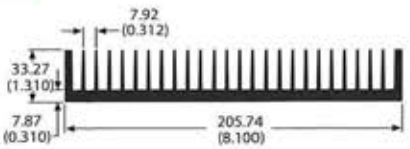
71235 | 2.2 lb/ft | 1.48 °C/W/3in | Per.=47.15

8



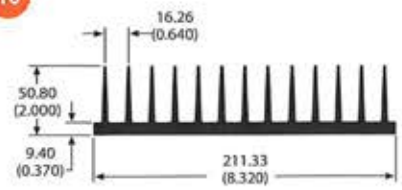
62805 | 3.1 lb/ft | 2.28 °C/W/3in | Per.=30.70

9



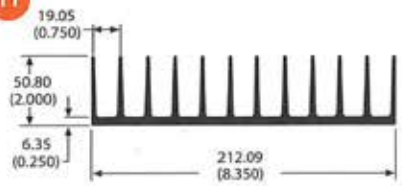
80580 | 6.5 lb/ft | 0.90 °C/W/3in | Per.=77.32

10



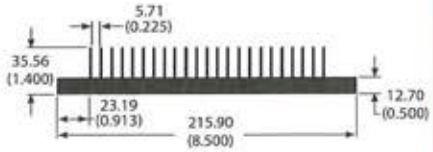
70400 | 6.9 lb/ft | 1.22 °C/W/3in | Per.=57.26

11



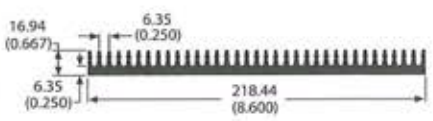
class A
60815 | 5.7 lb/ft | 1.22 °C/W/3in | Per.=57.10

12



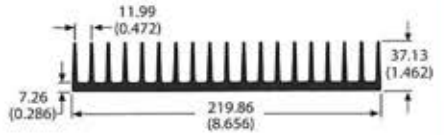
71390 | 6.8 lb/ft | 1.20 °C/W/3in | Per.=58.07

13



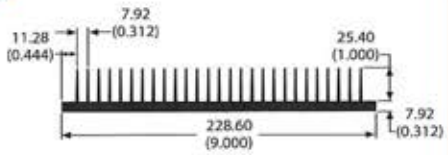
80715 | 4.3 lb/ft | 1.57 °C/W/3in | Per.=44.47

14



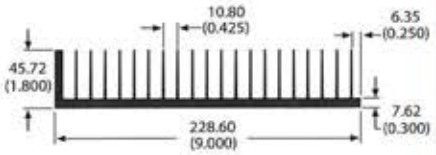
65515 | 6.2 lb/ft | 1.18 °C/W/3in | Per.=59.38

15



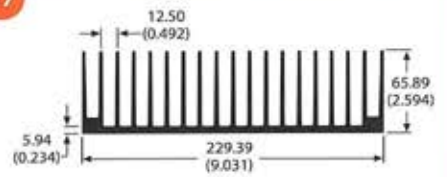
80510 | 5.6 lb/ft | 0.98 °C/W/3in | Per.=71.13

16



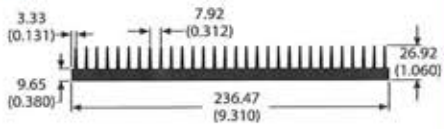
65440 | 6.0 lb/ft | 0.87 °C/W/3in | Per.=80.10

17



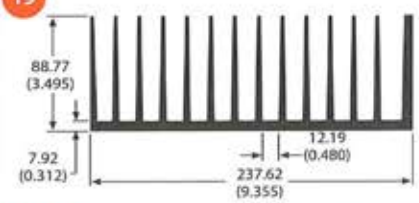
65615 | 9.0 lb/ft | 0.67 °C/W/3in | Per.=104.64

18



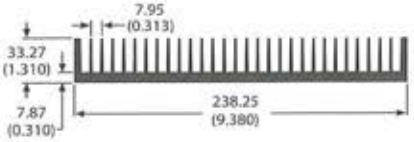
82265 | 6.0 lb/ft | 1.22 °C/W/3in | Per.=57.49

19



77335 | 11.9 lb/ft | 0.66 °C/W/3in | Per.=105.92

20



80575 | 6.5 lb/ft | 0.90°C/W/3in | Per.=77.32

AAVID THERMALLOY
www.aavidthermalloy.com

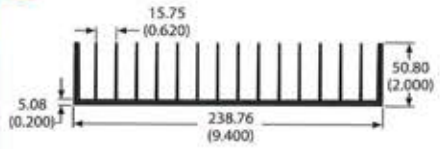
AMERICA
EUROPE

USA Tel: +1 (603) 224-9988 email: info@aavid.com
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com

ASIA

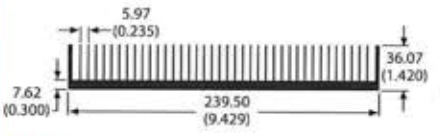
Singapore Tel: +65 6362 8388 email: sales@aavid.com.sg
Taiwan Tel: +886(2) 2698-9888 email: sales@aavid.com.tw

1



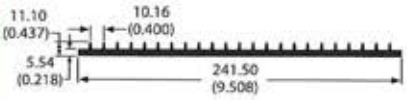
66480 | 5.6 lb/ft | 0.93 °C/W/3in | Per.=75.56

2



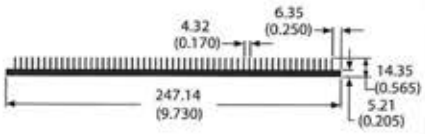
82590 | 6.1 lb/ft | 0.65 °C/W/3in | Per.=108.37

3



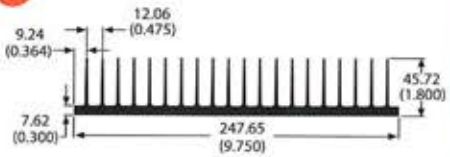
71000 | 2.9 lb/ft | 2.52 °C/W/3in | Per.=27.73

4



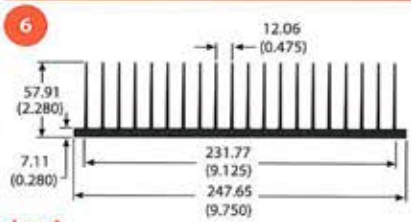
68295 | 3.5 lb/ft | 1.23 °C/W/3in | Per.=56.83

5



76525 | 6.3 lb/ft | 0.90 °C/W/3in | Per.=77.72

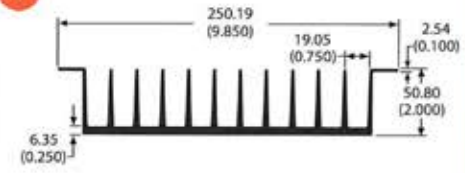
6



class A

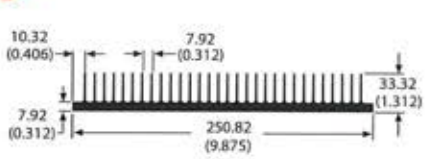
62725 | 7.0 lb/ft | 0.72 °C/W/3in | Per.=97.70

7



62185 | 6.1 lb/ft | 1.18 °C/W/3in | Per.=59.42

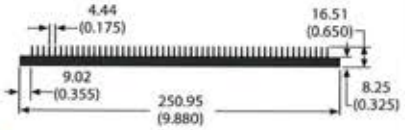
8



class A

60520 | 6.1 lb/ft | 0.90 °C/W/3in | Per.=77.66

9

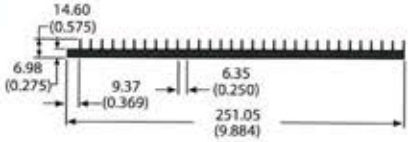


73265 | 5.0 lb/ft | 1.36 °C/W/3in | Per.=51.42

Fabrication Capabilities

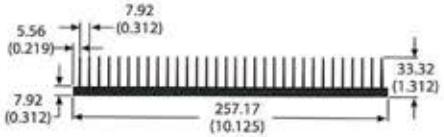
If the thermal solution requires complete fabrication of an extruded profile heat sink, Aavid Thermalloy is equipped for virtually any secondary operation. From a simple routine cut, deburr, and wash to complex milling, punching, finishing and accessory (pads, studs, etc) assembly.

10



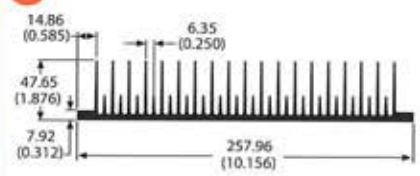
61780 | 3.8 lb/ft | 1.89 °C/W/3in | Per.=37.07

11



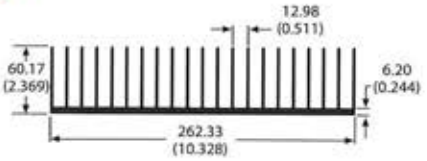
77810 | 6.2 lb/ft | 0.85 °C/W/3in | Per.=82.72

12



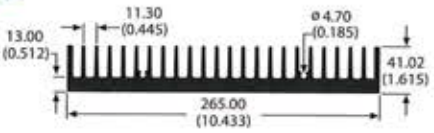
78715 | 6.6 lb/ft | 0.69 °C/W/3in | Per.=101.45

13



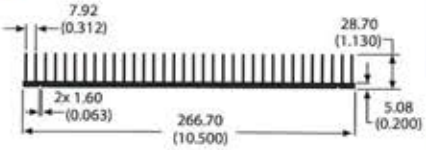
65525 | 8.1 lb/ft | 0.64 °C/W/3in | Per.=108.95

14



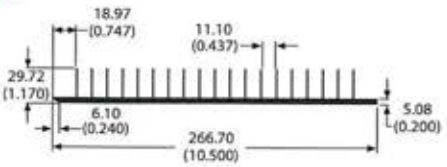
69695 | 10.7 lb/ft | 0.98 °C/W/3in | Per.=71.32

15



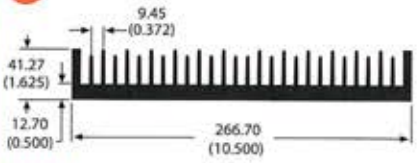
81245 | 5.4 lb/ft | 0.84 °C/W/3in | Per.=83.09

16



82375 | 3.7 lb/ft | 1.21 °C/W/3in | Per.=58.00

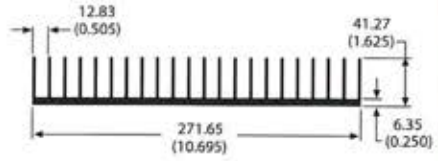
17



class A

62325 | 10.8 lb/ft | 0.82 °C/W/3in | Per.=85.27

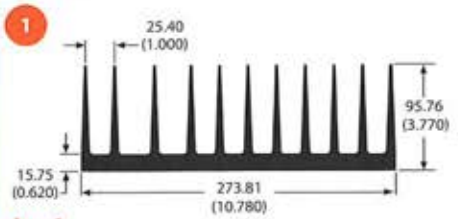
18



76125 | 6.6 lb/ft | 0.86 °C/W/3in | Per.=80.91

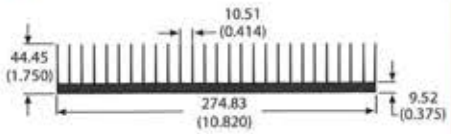
Flatback–Flatback w/Gaps

1



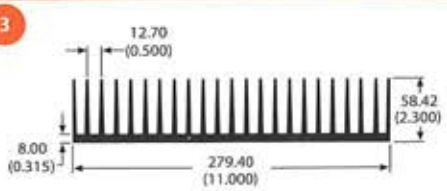
class A
61785 16.2 lb/ft 0.79 °C/W/3in Per.=88.30

2



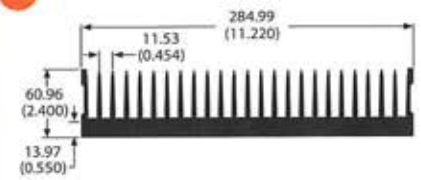
75890 7.4 lb/ft 0.74 °C/W/3in Per.=94.73

3



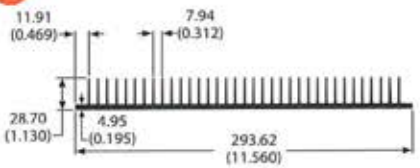
65340 11.5 lb/ft 0.63 °C/W/3in Per.=110.29

4



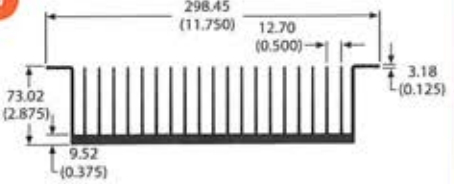
72355 14.8 lb/ft 0.54 °C/W/3in Per.=130.47

5



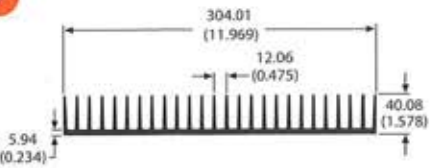
80605 5.3 lb/ft 0.81 °C/W/3in Per.=86.47

6



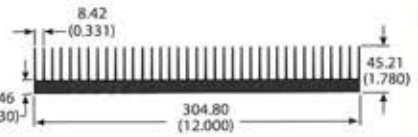
69200 10.2 lb/ft 0.56 °C/W/3in Per.=125.57

7



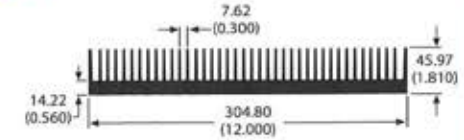
80345 8.3 lb/ft 0.78 °C/W/3in Per.=90.07

8



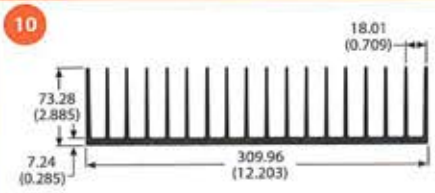
70165 11.8 lb/ft 0.61 °C/W/3in Per.=113.86

9



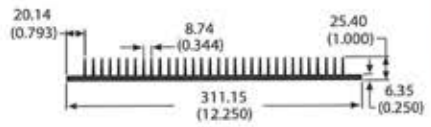
81640 14.1 lb/ft 0.58 °C/W/3in Per.=120.35

10



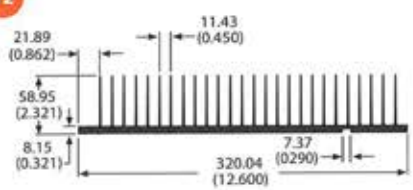
class A
65535 11.3 lb/ft 0.60 °C/W/3in Per.=115.65

11



class A
61155 6.8 lb/ft 0.94 °C/W/3in Per.=74.46

12

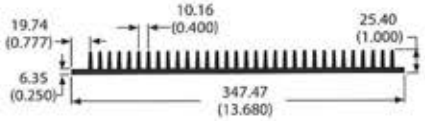


69960 9.8 lb/ft 0.55 °C/W/3in Per.=127.22

13

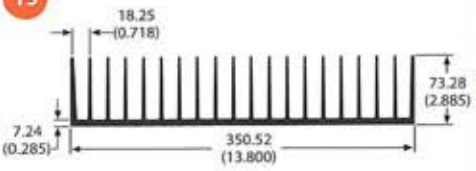
72225 8.8 lb/ft 0.69 °C/W/3in Per.=101.82

14



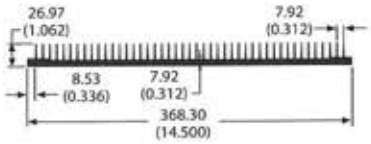
62645 8.3 lb/ft 0.97 °C/W/3in Per.=71.76

15



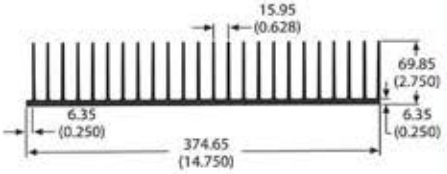
82445 12.6 lb/ft 0.54 °C/W/3in Per.=128.89

16



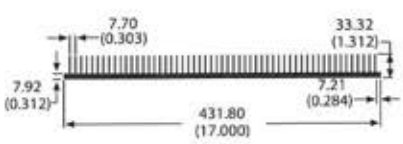
71770 8.7 lb/ft 0.75 °C/W/3in Per.=92.67

17



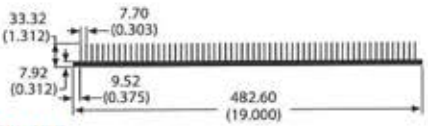
72545 11.9 lb/ft 0.48 °C/W/3in Per.=144.77

18



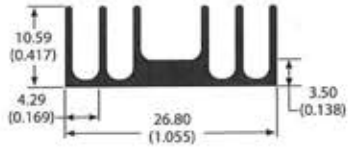
class A
63340 11.3 lb/ft 0.49 °C/W/3in Per.=142.00

19



class A
62335 12.9 lb/ft 0.44 °C/W/3in Per.=157.72

20



72695 0.2 lb/ft 11.30 °C/W/3in Per.=6.19

KEY

lb/ft = Weight per foot in pounds

°C/W/3in = Natural convection thermal resistance for a black anodized, 3 inch cut length

Per. = Perimeter in inches

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United Kingdom Tel: +44 1793 401400 email: sales.uki@aavid.com

ASIA

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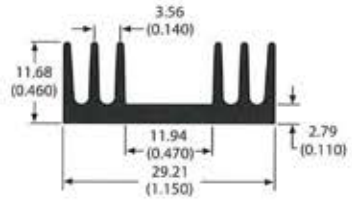
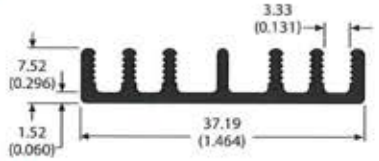
1



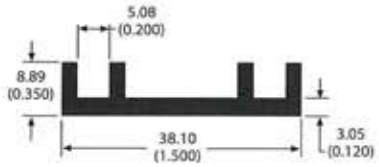
62365 | 0.3 lb/ft | 11.01 °C/W/3in | Per.=6.35

2



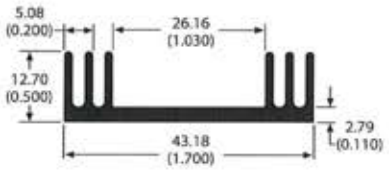
80725 | 0.2 lb/ft | 10.55 °C/W/3in | Per.=6.63

3



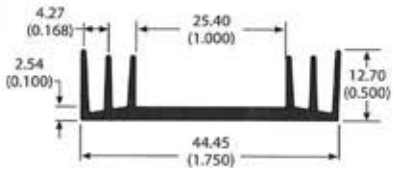
60185 | 0.3 lb/ft | 13.76 °C/W/3in | Per.=5.08

4



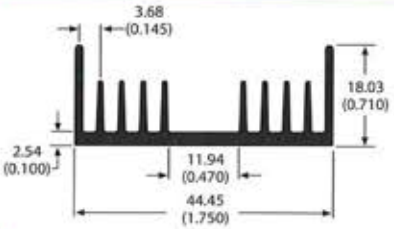
80505 | 0.4 lb/ft | 8.74 °C/W/3in | Per.=8.00

5



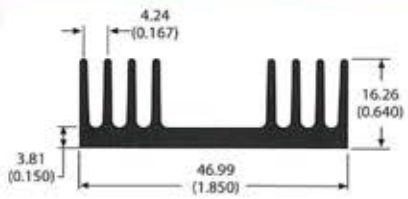
60950 | 0.3 lb/ft | 8.70 °C/W/3in | Per.=8.04

6



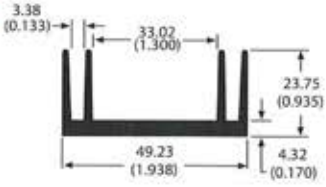
61770 | 0.5 lb/ft | 6.13 °C/W/3in | Per.=11.41

7



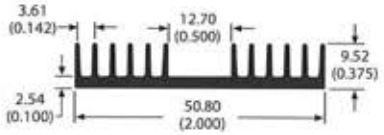
82580 | 0.6 lb/ft | 6.22 °C/W/3in | Per.=11.25

8



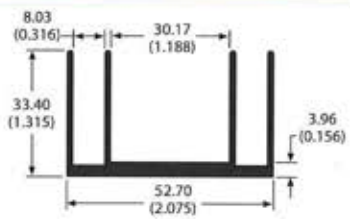
80170 | 0.7 lb/ft | 6.92 °C/W/3in | Per.=10.11

9



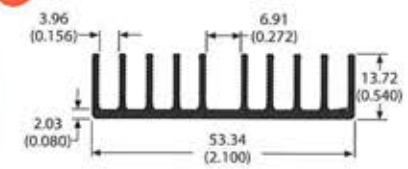
61420 | 0.4 lb/ft | 6.83 °C/W/3in | Per.=10.24

10



62355 | 0.7 lb/ft | 5.10 °C/W/3in | Per.=13.71

11



66435 | 0.5 lb/ft | 4.78 °C/W/3in | Per.=14.63

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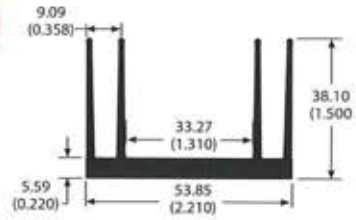
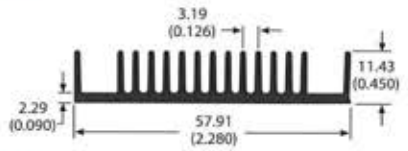
12



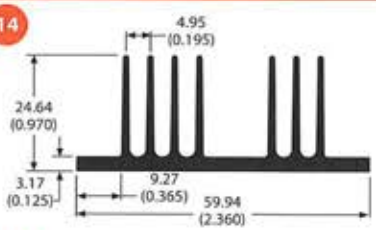
62215 | 0.9 lb/ft | 4.09 °C/W/3in | Per.=17.11

13



81920 | 0.6 lb/ft | 4.75 °C/W/3in | Per.=14.73

14



78450 | 0.8 lb/ft | 4.32 °C/W/3in | Per.=16.19

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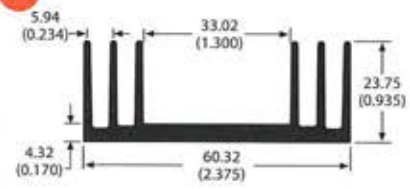
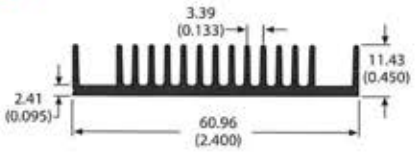


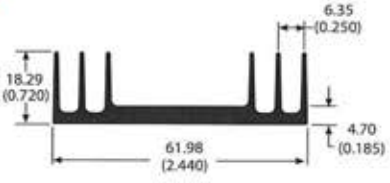
62220 | 0.8 lb/ft | 4.94 °C/W/3in | Per.=14.14

16



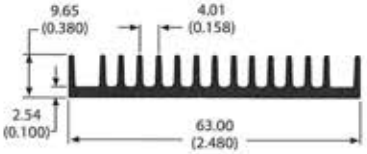
81905 | 0.6 lb/ft | 4.71 °C/W/3in | Per.=14.85

17



60985 | 0.7 lb/ft | 5.99°C/W/3in | Per.=11.67

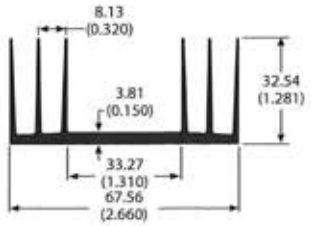
18



72425 | 0.6 lb/ft | 5.52°C/W/3in | Per.=12.66

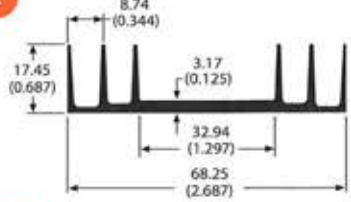
Flatback w/Gaps

1



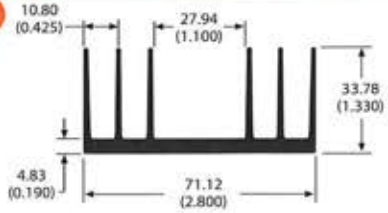
61065 1.0 lb/ft 3.78 °C/W/3in Per.=18.50

2



60865 0.6 lb/ft 5.71 °C/W/3in Per.=12.25

3



61390 1.2 lb/ft 3.27 °C/W/3in Per.=21.36

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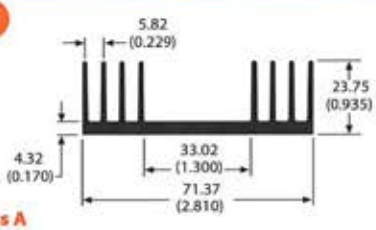
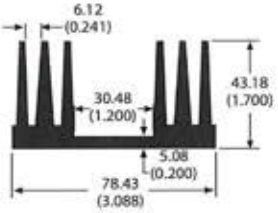


class A
61040 1.0 lb/ft 3.86 °C/W/3in Per.=18.13

5



60625 2.6 lb/ft 3.12 °C/W/3in Per.=22.40

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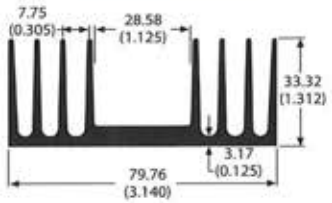
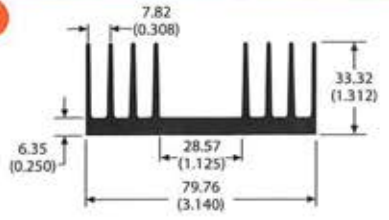


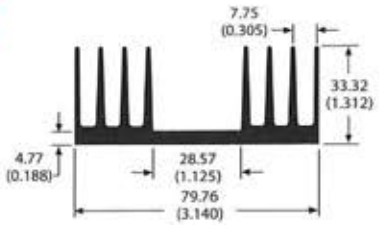
81060 1.6 lb/ft 2.90 °C/W/3in Per.=24.15

7



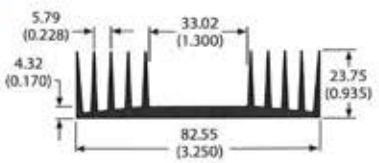
61455 1.7 lb/ft 3.04 °C/W/3in Per.=23.03

8



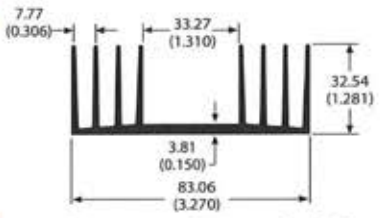
64835 1.7 lb/ft 3.04 °C/W/3in Per.=23.03

9



61035 1.2 lb/ft 3.19 °C/W/3in Per.=21.92

10



61060 1.4 lb/ft 2.84 °C/W/3in Per.=24.59

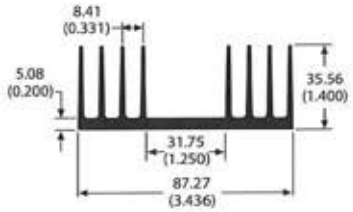
KEY

lb/ft = Weight per foot in pounds

°C/W/3in = Natural convection thermal resistance for a black anodized, 3 inch cut length

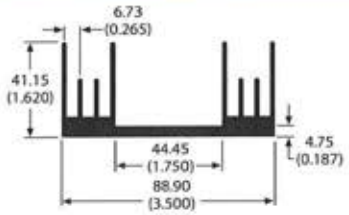
Per. = Perimeter in inches

11



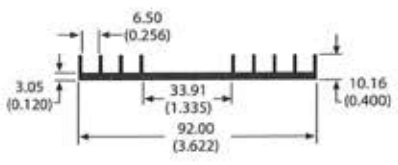
61055 1.7 lb/ft 2.73 °C/W/3in Per.=25.61

12



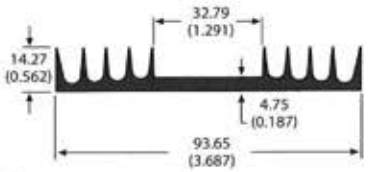
65695 1.8 lb/ft 3.03 °C/W/3in Per.=23.11

13



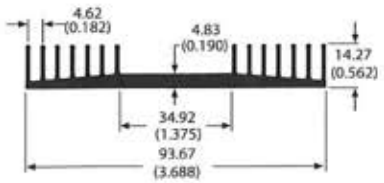
60555 0.7 lb/ft 5.61 °C/W/3in Per.=12.46

14



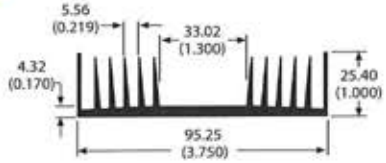
60110 1.0 lb/ft 4.79 °C/W/3in Per.=14.60

15



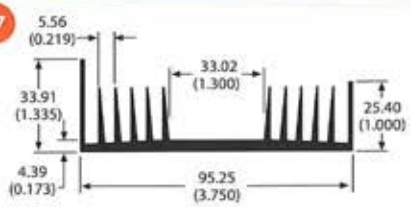
60725 1.0 lb/ft 3.14 °C/W/3in Per.=22.27

16



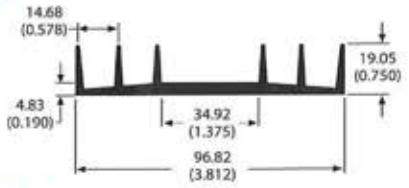
60935 1.4 lb/ft 2.68 °C/W/3in Per.=26.06

17



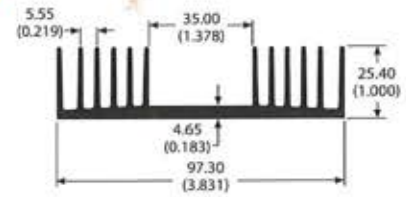
60570 1.4 lb/ft 2.62 °C/W/3in Per.=26.70

18



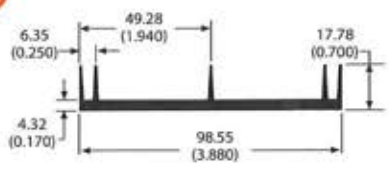
60850 1.1 lb/ft 4.80 °C/W/3in Per.=14.57

19



82200 1.6 lb/ft 2.57 °C/W/3in Per.=27.16

20



63725 1.0 lb/ft 5.31 °C/W/3in Per.=13.16

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AMERICA
EUROPE
USA Tel: +1 (603) 224-9988 email: info@aavid.com
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com

ASIA
Singapore Tel: +65 6362 8388 email: sales@aavid.com.sg
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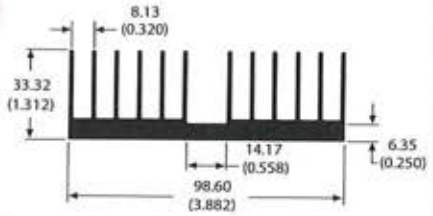

61850 2.2 lb/ft 2.19 °C/W/3in Per.=31.90

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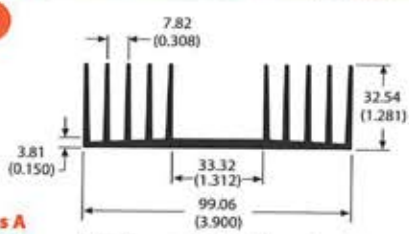
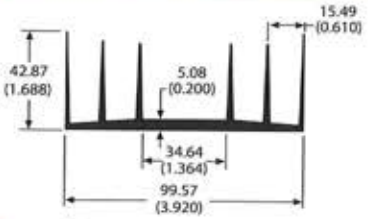


class A
60630 1.7 lb/ft 2.29 °C/W/3in Per.=30.49

3



61050 1.5 lb/ft 2.87 °C/W/3in Per.=24.37

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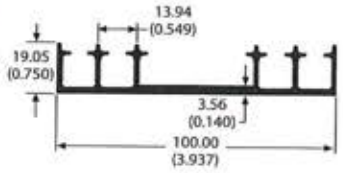

60395 1.0 lb/ft 3.54 °C/W/3in Per.=19.73

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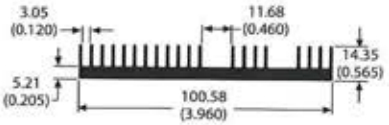
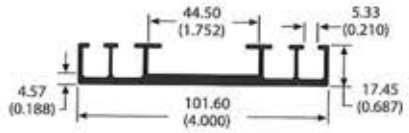


76625 1.4 lb/ft 3.21 °C/W/3in Per.=21.79

6



61445 1.1 lb/ft 4.13 °C/W/3in Per.=16.94

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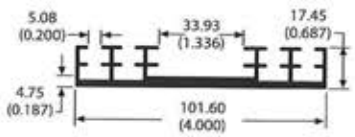
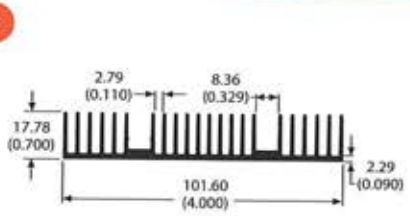


60665 1.2 lb/ft 3.48 °C/W/3in Per.=20.11

8



71115 1.3 lb/ft 2.09 °C/W/3in Per.=33.51

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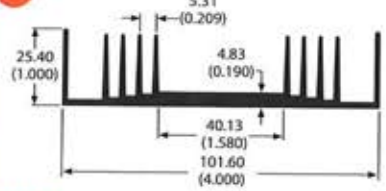


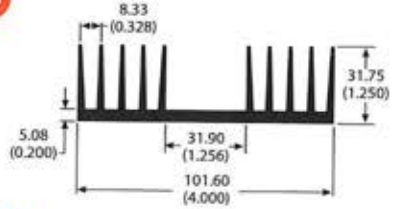
61030 1.2 lb/ft 2.90 °C/W/3in Per.=24.10

Rapid Prototype Creation

Companies turn to Aavid Thermalloy when they need a quick turnaround on short run thermal components for product design verification and pre-production launch programs.

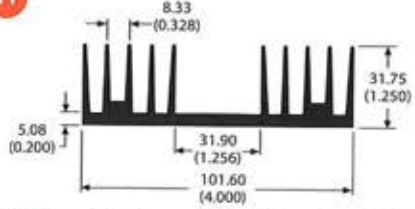
We are ready to help when there is a need for quick turnaround on short run thermal components for product design verification and pre-production launch programs.

10



62475 2.0 lb/ft 2.46 °C/W/3in Per.=28.48

11



82350 2.1 lb/ft 2.52 °C/W/3in Per.=27.78

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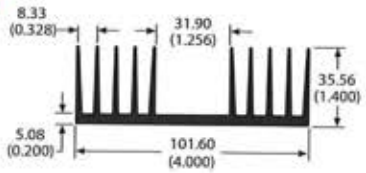

60905 2.2 lb/ft 2.22°C/W/3in Per.=31.43

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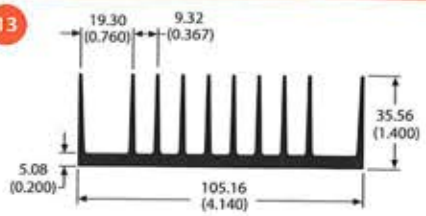

63275 2.0 lb/ft 2.21 °C/W/3in Per.=31.61

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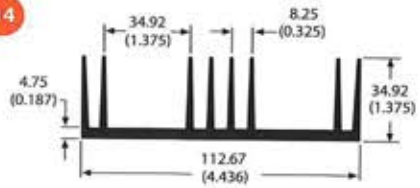
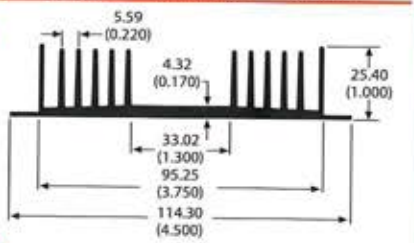


63060 2.0 lb/ft 2.54°C/W/3in Per.=27.49

15



60805 1.6 lb/ft 2.53 °C/W/3in Per.=27.69

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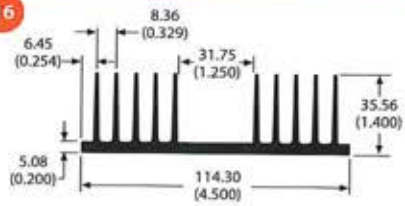
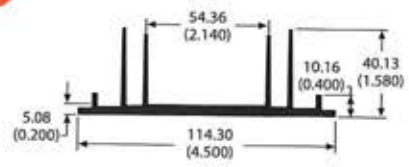


60350 2.3 lb/ft 2.17 °C/W/3in Per.=32.19

17



67870 1.5 lb/ft 3.37 °C/W/3in Per.=20.74

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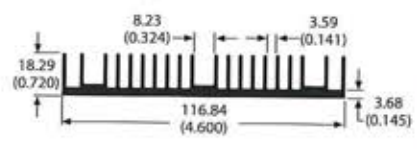
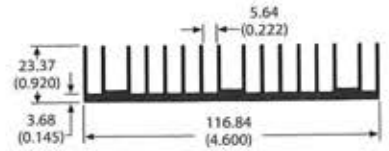


65990 1.6 lb/ft 2.24 °C/W/3in Per.=31.17

Flatback w/Gaps

1



65555 1.7 lb/ft 2.08 °C/W/3in Per.=33.55

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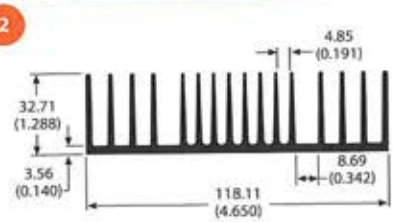

74365 2.5 lb/ft 1.57 °C/W/3in Per.=44.60

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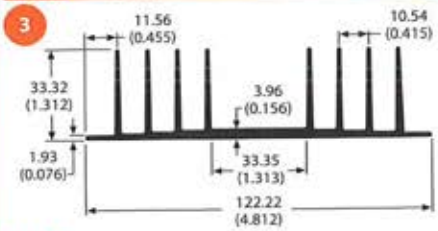
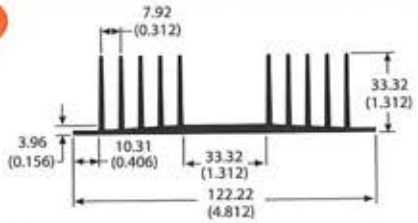


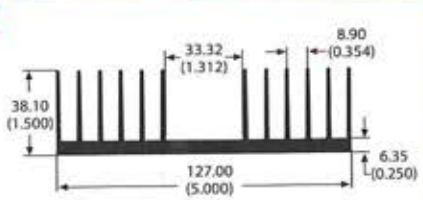
66635 1.6 lb/ft 2.49 °C/W/3in Per.=28.10

4



60840 1.8 lb/ft 2.12 °C/W/3in Per.=32.97

5



78950 2.7 lb/ft 1.76 °C/W/3in Per.=39.78

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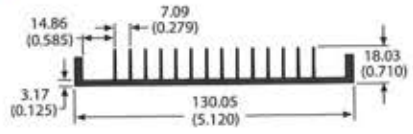
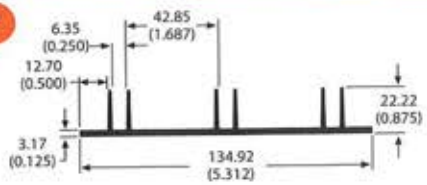


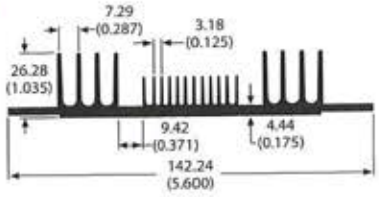
68830 1.4 lb/ft 2.52 °C/W/3in Per.=27.79

7



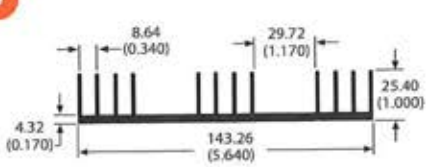
60845 1.2 lb/ft 3.58 °C/W/3in Per.=19.53

8



81760 2.0 lb/ft 2.02 °C/W/3in Per.=34.55

9



62460 2.0 lb/ft 2.25 °C/W/3in Per.=31.03

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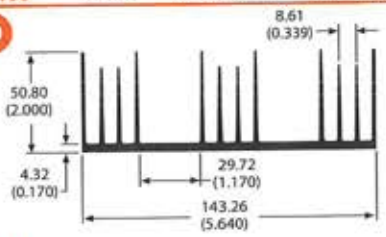


62410 2.8 lb/ft 1.38 °C/W/3in Per.=50.72

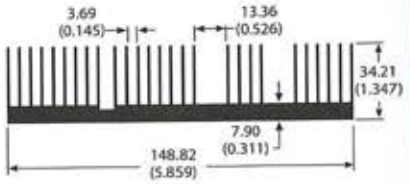
KEY

lb/ft = Weight per foot in pounds

°C/W/3in = Natural convection thermal resistance for a black anodized, 3 inch cut length

Per. = Perimeter in inches

11



81880 3.6 lb/ft 1.03 °C/W/3in Per.=67.99

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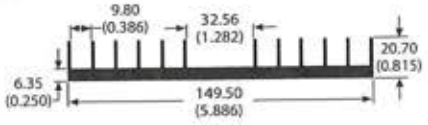

60970 2.2 lb/ft 2.77 °C/W/3in Per.=25.22

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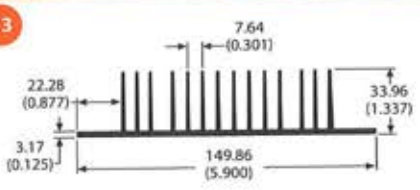
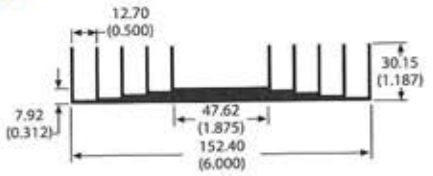


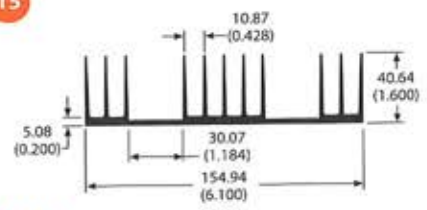
75700 2.3 lb/ft 1.56 °C/W/3in Per.=44.89

14



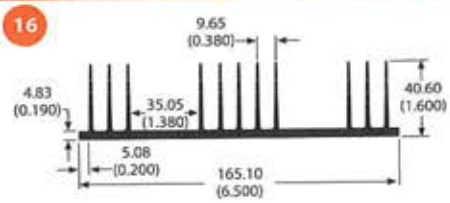
60440 2.2 lb/ft 2.18 °C/W/3in Per.=32.06

15



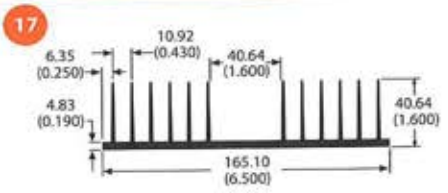
61690 2.6 lb/ft 1.64 °C/W/3in Per.=42.51

16



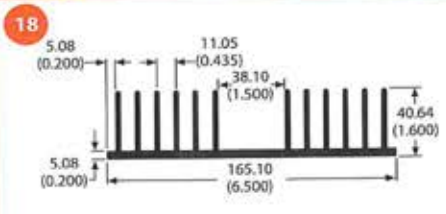
61715 2.8 lb/ft 1.62 °C/W/3in Per.=43.19

17



61475 2.9 lb/ft 1.51 °C/W/3in Per.=46.19

18



60900 3.9 lb/ft 1.51 °C/W/3in Per.=46.18

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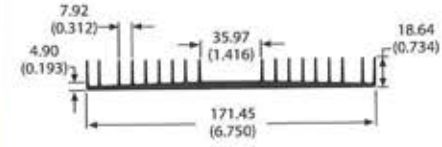

61230 2.0 lb/ft 2.11 °C/W/3in Per.=33.20

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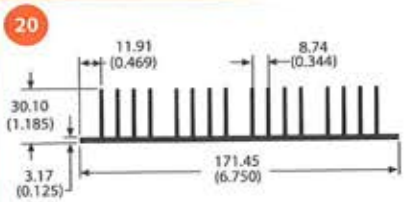

60995 2.6 lb/ft 1.50 °C/W/3in Per.=46.59

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www.aavidthermalloy.com

AMERICA
EUROPE

USA Tel: +1 (603) 224-9988 email: info@aavid.com
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com

ASIA

Singapore Tel: +65 6362 8388 email: sales@aavid.com.sg
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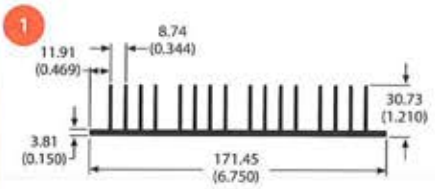
1



61710 2.8 lb/ft 1.50 °C/W/3in Per.=46.68

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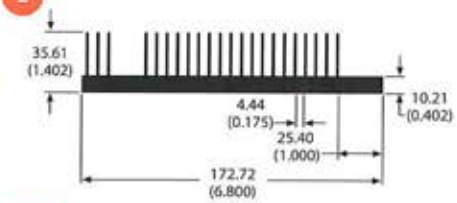

79455 4.8 lb/ft 1.21 °C/W/3in Per.=57.91

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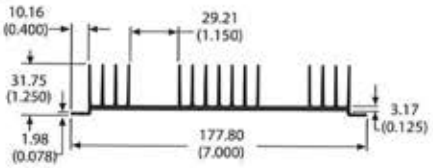

61340 2.3 lb/ft 1.61 °C/W/3in Per.=43.31

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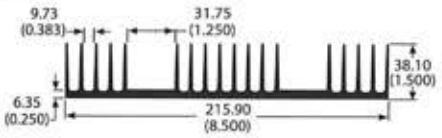
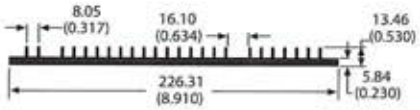


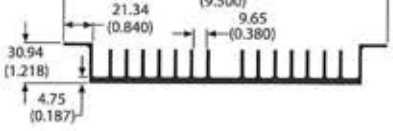
62495 4.6 lb/ft 1.13 °C/W/3in Per.=61.70

5



70455 3.1 lb/ft 2.24 °C/W/3in Per.=31.22

6



61665 3.6 lb/ft 1.53 °C/W/3in Per.=45.59

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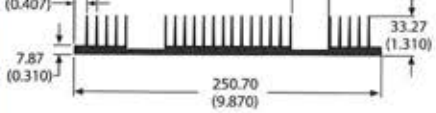
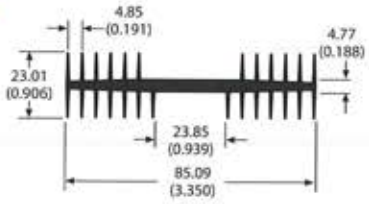


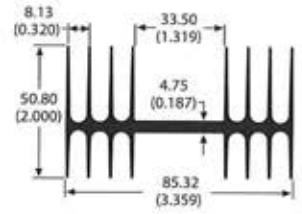
62030 5.4 lb/ft 1.05 °C/W/3in Per.=66.90

8



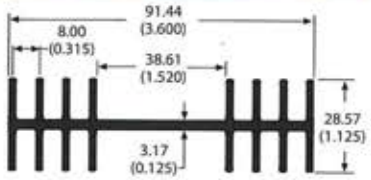
60450 1.2 lb/ft 2.78 °C/W/3in Per.=25.17

9



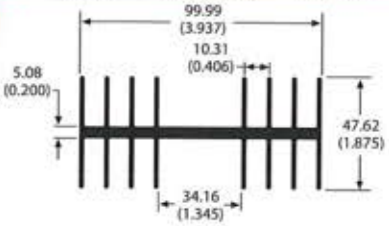
60455 1.7 lb/ft 2.03 °C/W/3in Per.=34.51

10



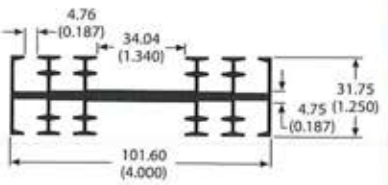
61140 1.3 lb/ft 2.76 °C/W/3in Per.=25.32

11



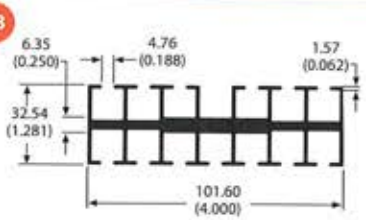
60500 2.1 lb/ft 2.05 °C/W/3in Per.=34.16

12



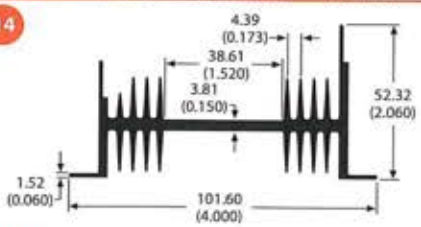
60645 1.6 lb/ft 2.28 °C/W/3in Per.=30.67

13



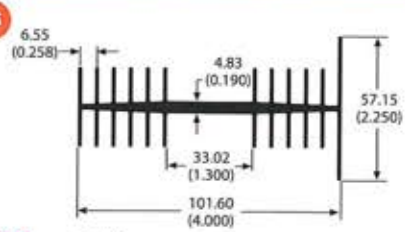
64245 1.8 lb/ft 2.13 °C/W/3in Per.=32.80

14



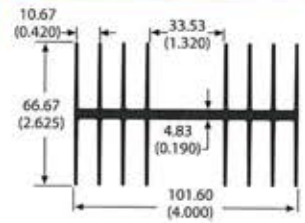
60355 1.6 lb/ft 2.31 °C/W/3in Per.=30.30

15



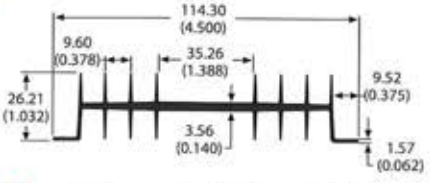
60830 1.7 lb/ft 1.96 °C/W/3in Per.=35.72

16



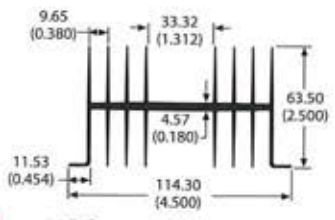
60755 2.5 lb/ft 1.51 °C/W/3in Per.=46.27

17



80400 1.0 lb/ft 3.13 °C/W/3in Per.=22.36

18



60835 2.2 lb/ft 1.54 °C/W/3in Per.=45.37

Extrusion Alloys

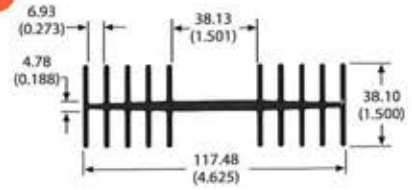
We use 6063-T5 aluminum, unless otherwise specified, because:

- Conducts more heat than many other aluminum alloys
- Is more easily extruded into complex shapes
- Is easily machined
- Is more readily available from many international aluminum suppliers

We recommend T5 hardness to minimize warping and loss of tolerance.

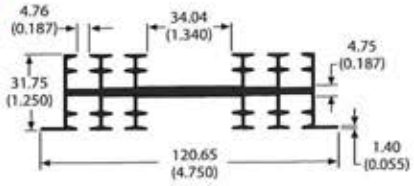
Double Sided – Max Clip

1



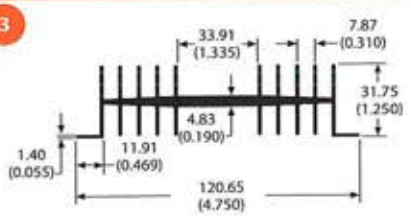
60280 2.3 lb/ft 1.99 °C/W/3in Per.=35.14

2



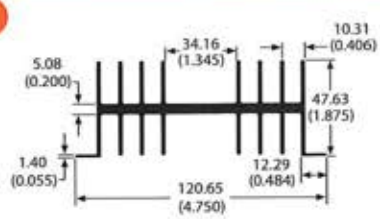
60245 1.7 lb/ft 2.11 °C/W/3in Per.=33.14

3



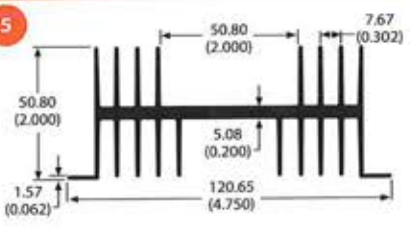
60050 1.6 lb/ft 2.28 °C/W/3in Per.=30.60

4



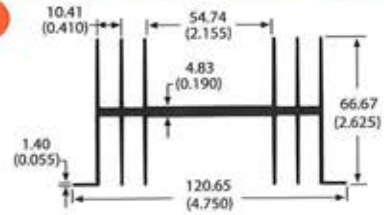
60065 2.2 lb/ft 1.98 °C/W/3in Per.=35.39

5



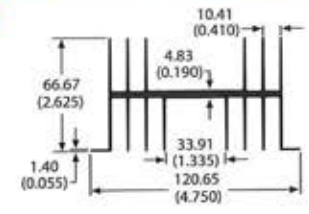
79075 2.3 lb/ft 1.73 °C/W/3in Per.=40.53

6



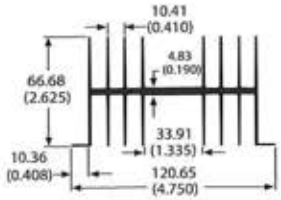
61760 1.9 lb/ft 1.81 °C/W/3in Per.=38.58

7



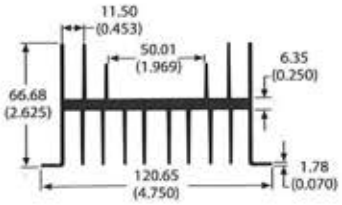
60780 2.1 lb/ft 1.61 °C/W/3in Per.=43.37

8



class A
60055 2.2 lb/ft 1.45 °C/W/3in Per.=48.15

9



67075 2.8 lb/ft 1.56 °C/W/3in Per.=44.72

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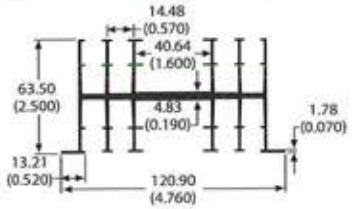


62310 2.1 lb/ft 1.55 °C/W/3in Per.=45.00

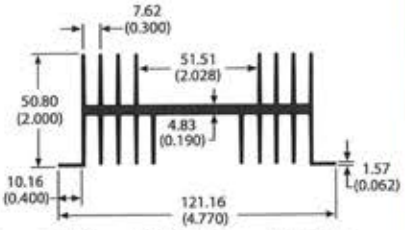
KEY

lb/ft = Weight per foot in pounds

°C/W/3in = Natural convection thermal resistance for a black anodized, 3 inch cut length

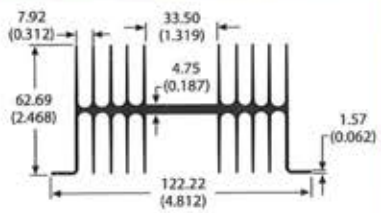
Per. = Perimeter in inches

11



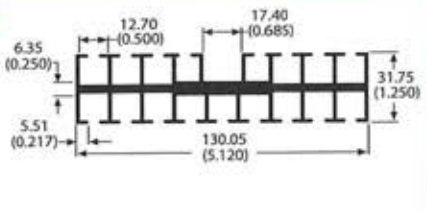
63140 2.4 lb/ft 1.71 °C/W/3in Per.=40.85

12



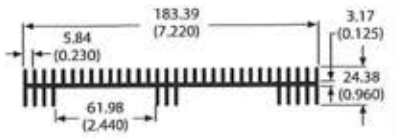
60565 2.3 lb/ft 1.30 °C/W/3in Per.=53.72

13



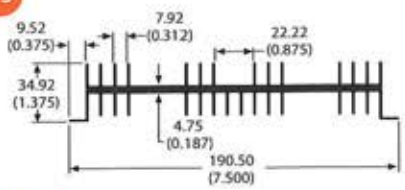
64375 2.2 lb/ft 1.71 °C/W/3in Per.=40.82

14



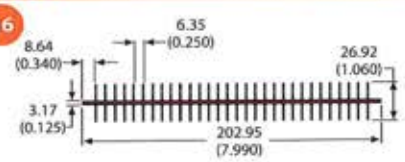
66340 2.8 lb/ft 1.47 °C/W/3in Per.=47.63

15



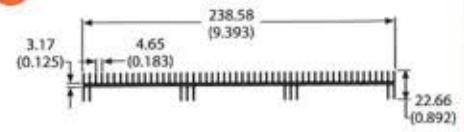
60410 2.7 lb/ft 1.51 °C/W/3in Per.=46.20

16



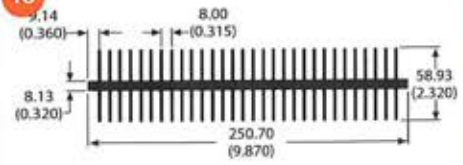
62160 3.1 lb/ft 1.01 °C/W/3in Per.=69.24

17



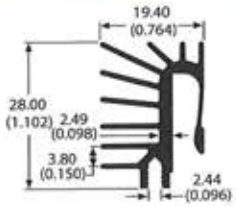
76960 2.9 lb/ft 1.24 °C/W/3in Per.=56.58

18



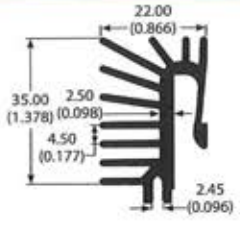
69545 9.9 lb/ft 0.51 °C/W/3in Per.=136.50

19



class A
78065 0.3 lb/ft 6.93 °C/W/3in Per.=10.09

20



78240 0.4 lb/ft 5.51 °C/W/3in Per.=12.69

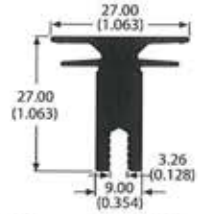
AAVID THERMALLOY
www.aavidthermalloy.com

AMERICA
USA Tel: +1 (603) 224-9988 email: info@aavid.com

EUROPE
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com

ASIA
Singapore Tel: +65 6362 8388 email: sales@aavid.com.sg
Taiwan Tel: +886(2) 2698-9888 email: sales@aavid.com.tw

1



78255 0.5 lb/ft 11.48 °C/W/3in Per.=6.09

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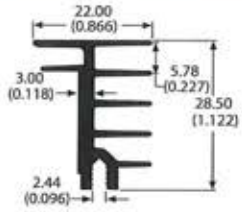
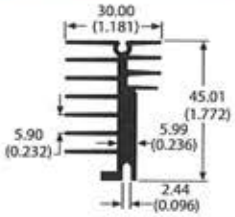


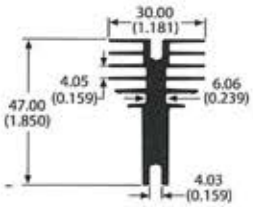
78265 0.3 lb/ft 8.72 °C/W/3in Per.=8.02

3



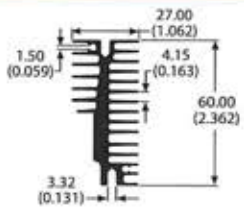
class A
78060 0.8 lb/ft 4.17 °C/W/3in Per.=16.77

4



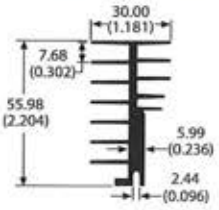
78020 0.8 lb/ft 4.72 °C/W/3in Per.=14.81

5



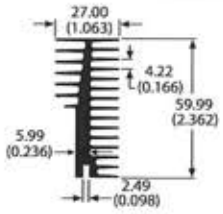
78245 1.1 lb/ft 2.97 °C/W/3in Per.=23.51

6



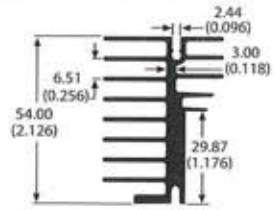
79360 0.8 lb/ft 3.98 °C/W/3in Per.=17.55

7



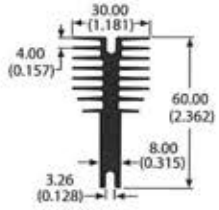
class A
78080 1.1 lb/ft 2.94 °C/W/3in Per.=23.78

8



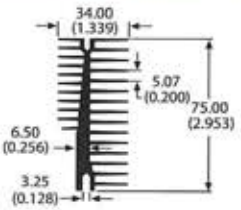
78075 1.1 lb/ft 3.03 °C/W/3in Per.=23.07

9



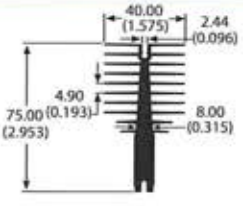
78220 1.1 lb/ft 3.65 °C/W/3in Per.=19.14

10



class A
78010 1.7 lb/ft 1.89 °C/W/3in Per.=37.09

11

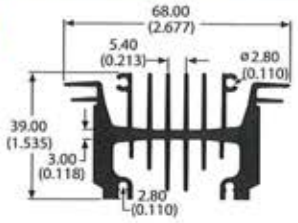


78070 1.7 lb/ft 2.25 °C/W/3in Per.=31.05

Performance vs. Length

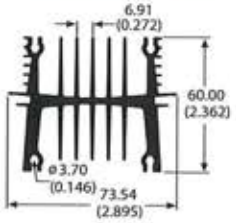
Thermal resistance changes significantly with length. To convert published natural convection thermal resistance at a 3 inch length to a desired length, see page 16 for a length correction table.

12



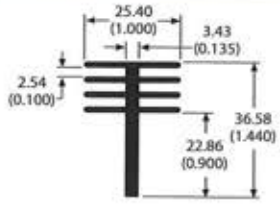
78345 1.5 lb/ft 2.63 °C/W/3in Per.=26.59

13



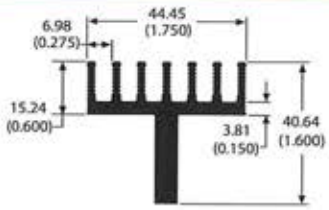
class A
78030 2.3 lb/ft 1.76 °C/W/3in Per.=39.75

14



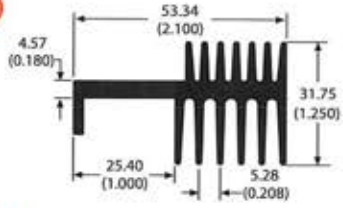
68255 0.5 lb/ft 7.13 °C/W/3in Per.=9.80

15



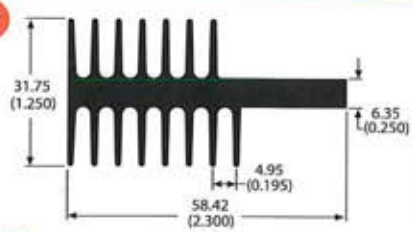
64285 0.9 lb/ft 5.08 °C/W/3in Per.=13.76

16



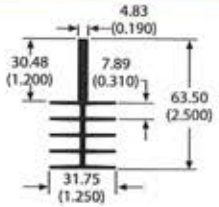
63005 1.1 lb/ft 3.93 °C/W/3in Per.=17.80

17



63010 1.2 lb/ft 3.73 °C/W/3in Per.=18.76

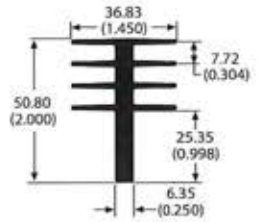
18



61150 1.2 lb/ft 4.35 °C/W/3in Per.=16.07

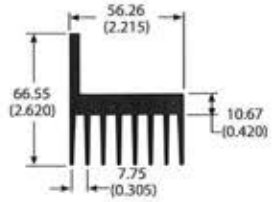
T's with Fins – Rail – Miscellaneous

1



63265 1.0 lb/ft 5.17 °C/W/3in Per.=13.52

2



62480 2.3 lb/ft 3.04 °C/W/3in Per.=23.02

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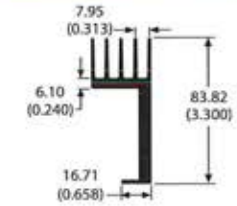

78770 1.5 lb/ft 4.16 °C/W/3in Per.=16.82

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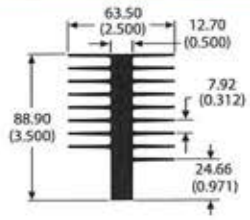

72185 3.6 lb/ft 1.52 °C/W/3in Per.=45.95

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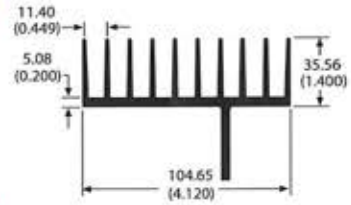

63250 2.7 lb/ft 2.01 °C/W/3in Per.=34.72

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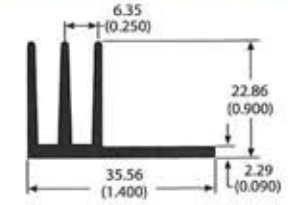

63380 0.4 lb/ft 9.19 °C/W/3in Per.=7.61

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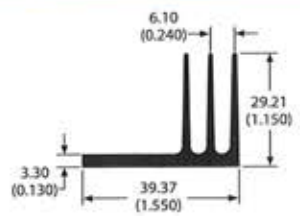
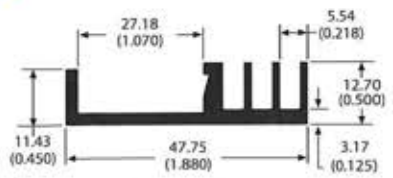


66330 0.5 lb/ft 7.65 °C/W/3in Per.=9.14

8



64300 0.4 lb/ft 9.05 °C/W/3in Per.=7.73

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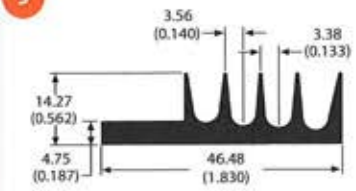

61590 0.5 lb/ft 9.37 °C/W/3in Per.=7.46

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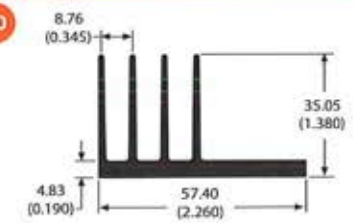


61325 0.9 lb/ft 4.96 °C/W/3in Per.=14.11

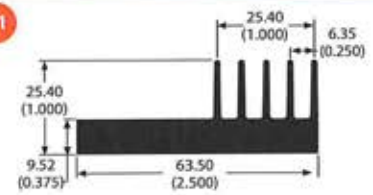
KEY

lb/ft = Weight per foot in pounds

°C/W/3in = Natural convection thermal resistance for a black anodized, 3 inch cut length

Per. = Perimeter in inches

11



63215 1.3 lb/ft 6.00 °C/W/3in Per.=11.65

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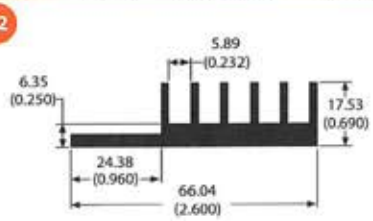

65295 0.9 lb/ft 6.40 °C/W/3in Per.=10.93

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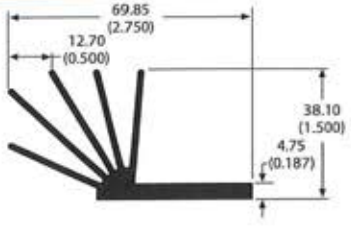

61875 1.0 lb/ft 4.25 °C/W/3in Per.=16.47

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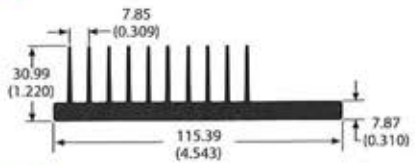

61485 2.3 lb/ft 2.58 °C/W/3in Per.=27.14

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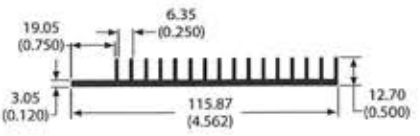
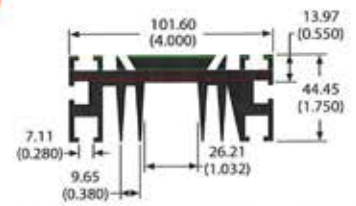


61285 1.1 lb/ft 3.31 °C/W/3in Per.=21.10

16



62290 3.6 lb/ft 2.20 °C/W/3in Per.=31.81

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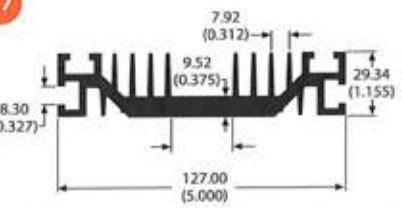

77495 3.0 lb/ft 2.20 °C/W/3in Per.=31.79

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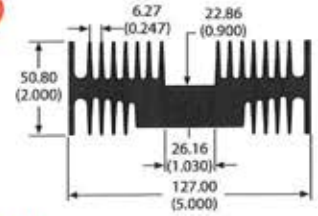
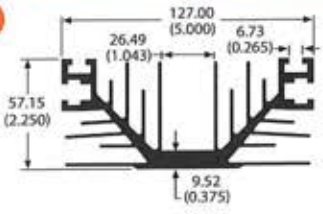


61640 6.4 lb/ft 1.42 °C/W/3in Per.=49.31

19



67170 3.6 lb/ft 1.29 °C/W/3in Per.=54.01

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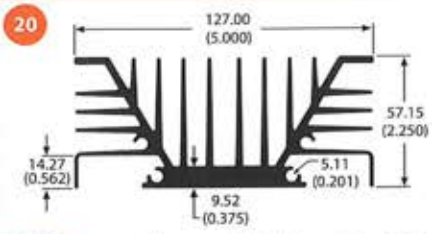


61965 4.1 lb/ft 1.23 °C/W/3in Per.=56.76

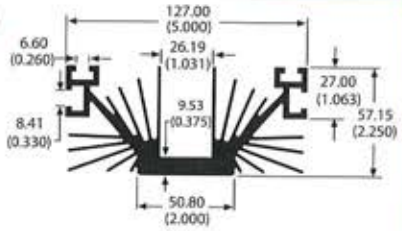
AAVID THERMALLOY
www.aavidthermalloy.com

AMERICA
USA Tel: +1 (603) 224-9988 email: info@aavid.com

EUROPE
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com

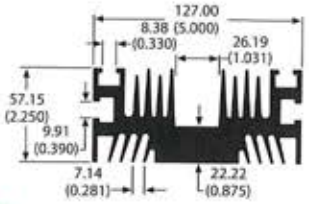
ASIA
Singapore Tel: +65 6362 8388 email: sales@aavid.com.sg
Taiwan Tel: +886(2) 2698-9888 email: sales@aavid.com.tw

1



60540 4.0 lb/ft 1.24 °C/W/3in Per.=56.55

2



62190 6.9 lb/ft 1.42 °C/W/3in Per.=49.17

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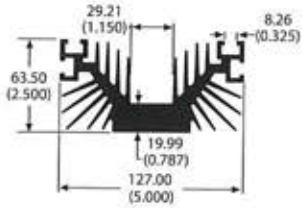

68360 6.0 lb/ft 1.28 °C/W/3in Per.=54.53

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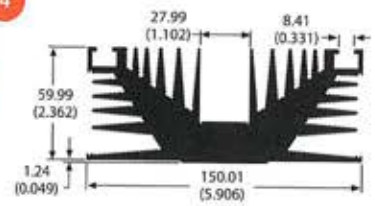

62780 8.2 lb/ft 0.96 °C/W/3in Per.=72.78

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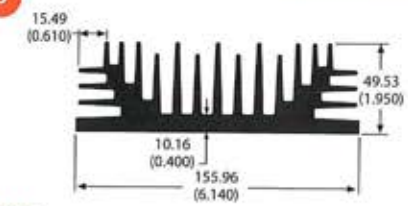

74970 6.9 lb/ft 1.24 °C/W/3in Per.=56.44

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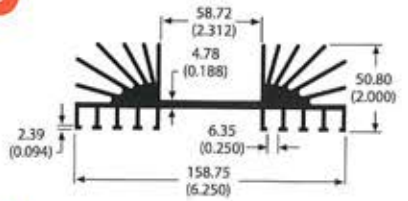

60730 4.1 lb/ft 1.37 °C/W/3in Per.=51.14

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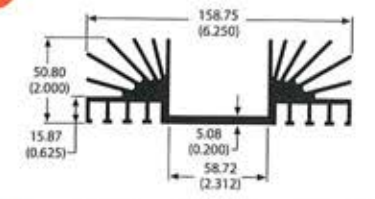

61310 4.2 lb/ft 1.37 °C/W/3in Per.=51.15

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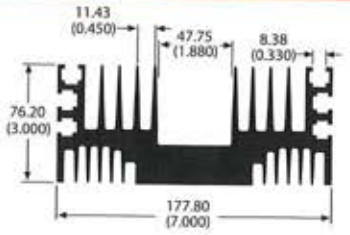

81955 10.7 lb/ft 0.94 °C/W/3in Per.=74.42

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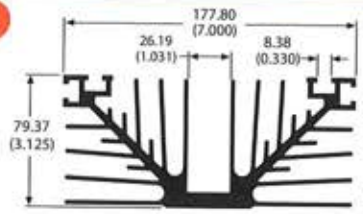
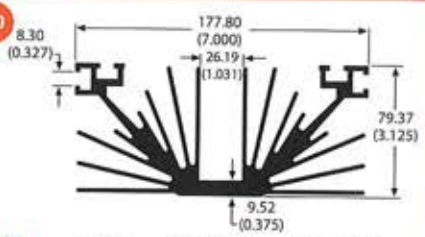


61570 7.3 lb/ft 0.81 °C/W/3in Per.=86.60

Temperature Rise Factor

Since natural convection heat sink efficiency degrades with decreasing sink-to-ambient temperature differential, a correction factor must be applied to the published data if an application requires a sink-to-ambient temperature rise of less than 75°C. See page 16 for a temperature correction table.

10



60655 7.5 lb/ft 0.85 °C/W/3in Per.=82.40

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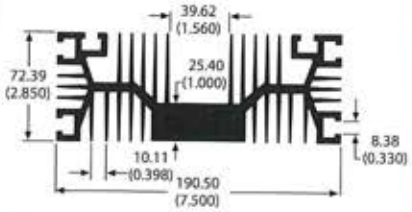

63885 10.1 lb/ft 0.70 °C/W/3in Per.=99.59

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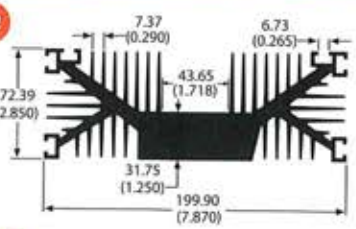

81655 11.8 lb/ft 0.70 °C/W/3in Per.=99.38

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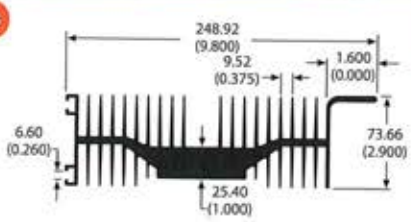

61540 11.1 lb/ft 0.65 °C/W/3in Per.=108.40

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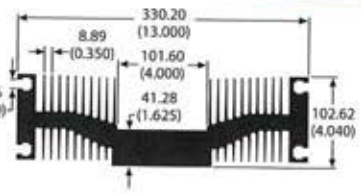

81985 27.8 lb/ft 0.46 °C/W/3in Per.=151.59

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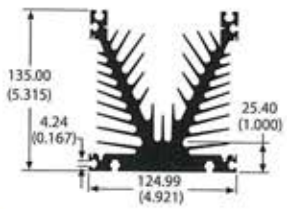

62905 10.8 lb/ft 0.77 °C/W/3in Per.=90.75

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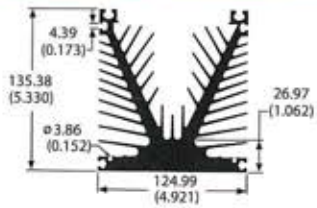

66975 11.0 lb/ft 0.69 °C/W/3in Per.=102.05

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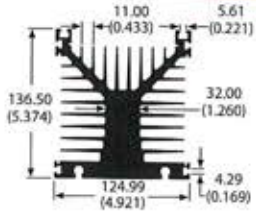

62375 12.9 lb/ft 0.76 °C/W/3in Per.=91.69

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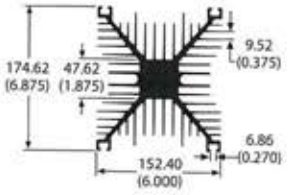

62100 14.0 lb/ft 0.47 °C/W/3in Per.=148.66

Miscellaneous

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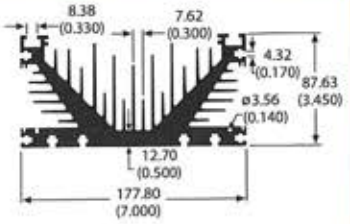

64730 10.9 lb/ft 0.75 °C/W/3in Per.=93.19

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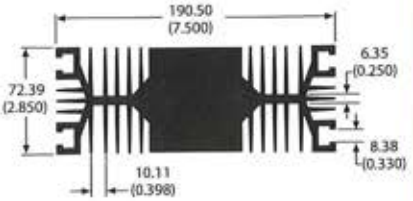

63880 14.9 lb/ft 0.78 °C/W/3in Per.=89.61

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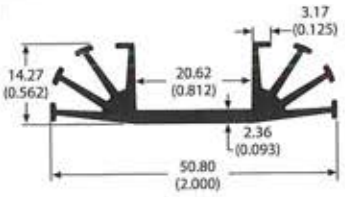

60070 0.4 lb/ft 6.96 °C/W/3in Per.=10.05

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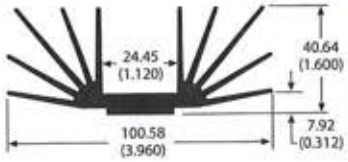

60150 1.7 lb/ft 2.46 °C/W/3in Per.=28.37

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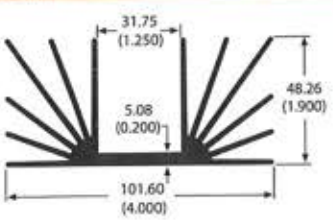

62720 2.2 lb/ft 1.88 °C/W/3in Per.=37.10

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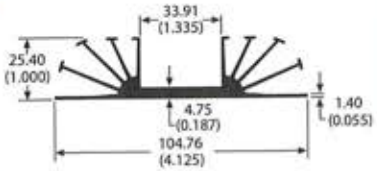
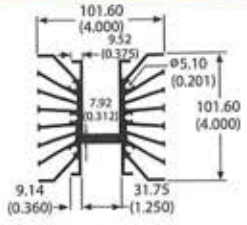


class A
60080 1.2 lb/ft 2.91 °C/W/3in Per.=24.04

7



60255 4.6 lb/ft 1.09 °C/W/3in Per.=64.06

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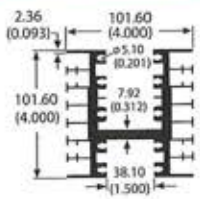

61270 5.1 lb/ft 1.13 °C/W/3in Per.=61.84

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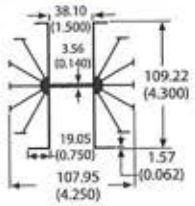

61175 2.3 lb/ft 1.25 °C/W/3in Per.=55.91

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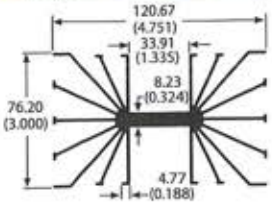


60650 2.9 lb/ft 1.14 °C/W/3in Per.=61.23

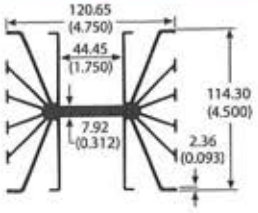
KEY

lb/ft = Weight per foot in pounds

°C/W/3in = Natural convection thermal resistance for a black anodized, 3 inch cut length

Per. = Perimeter in inches

11



60105 4.0 lb/ft 1.02 °C/W/3in Per.=68.40

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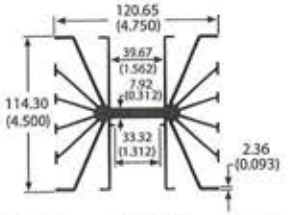

60060 4.0 lb/ft 0.98°C/W/3in Per.=71.03

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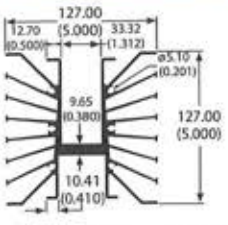

60260 5.4 lb/ft 0.84 °C/W/3in Per.=83.53

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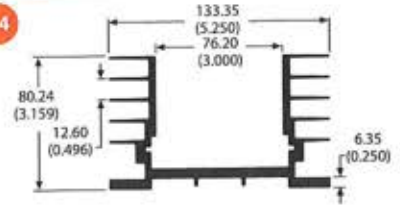

64160 3.8 lb/ft 1.69 °C/W/3in Per.=41.43

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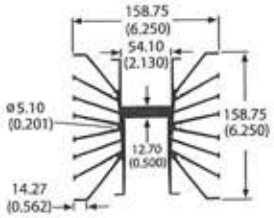

60265 7.7 lb/ft 0.67 °C/W/3in Per.=104.01

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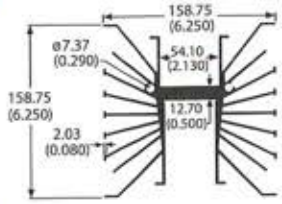

79240 7.6 lb/ft 0.65 °C/W/3in Per.=108.30

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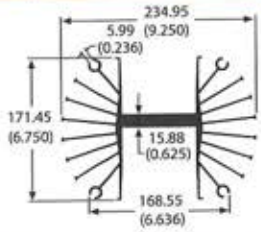

61015 9.6 lb/ft 0.60 °C/W/3in Per.=117.39

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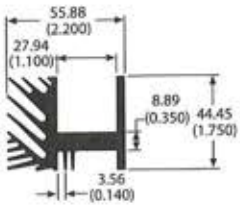

62165 1.9 lb/ft 3.4 °C/W/3in Per.=20.50

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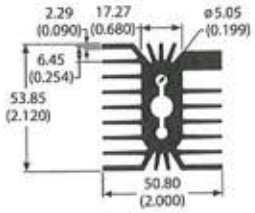
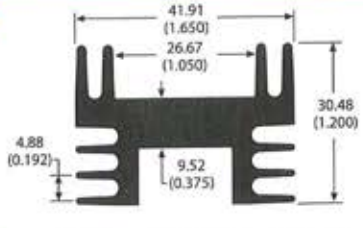


61960 2.2 lb/ft 2.00 °C/W/3in Per.=34.89

20



60525 1.1 lb/ft 5.85 °C/W/3in Per.=11.95

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AMERICA
EUROPE
USA Tel: +1 (603) 224-9988 email: info@aavid.com
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com

ASIA
Singapore Tel: +65 6362 8388 email: sales@aavid.com.sg
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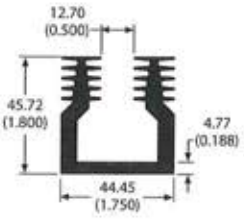
1



61435 1.6 lb/ft 3.95 °C/W/3in Per.=17.71

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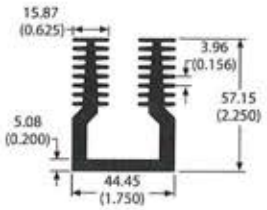

78610 2.0 lb/ft 2.91 °C/W/3in Per.=24.06

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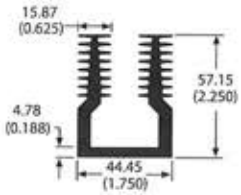

60180 1.9 lb/ft 2.94 °C/W/3in Per.=23.82

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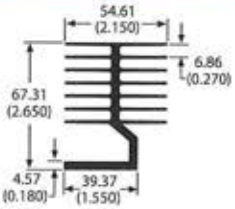
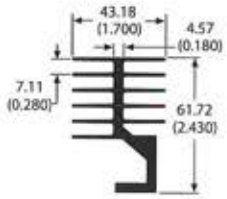


61775 2.0 lb/ft 1.99 °C/W/3in Per.=35.06

5



66470 1.4 lb/ft 3.00 °C/W/3in Per.=23.30

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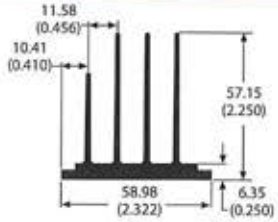

67360 1.4 lb/ft 3.59 °C/W/3in Per.=19.47

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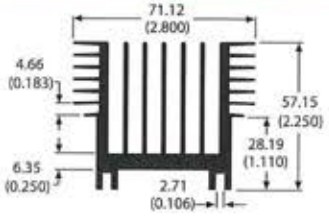

81255 2.4 lb/ft 1.72 °C/W/3in Per.=40.73

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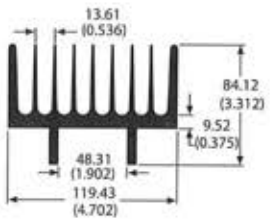
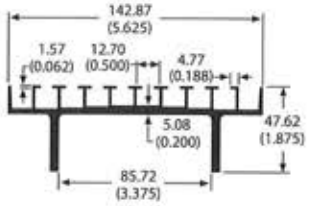


69620 5.7 lb/ft 1.50 °C/W/3in Per.=46.50

9



60925 2.1 lb/ft 2.31 °C/W/3in Per.=30.23

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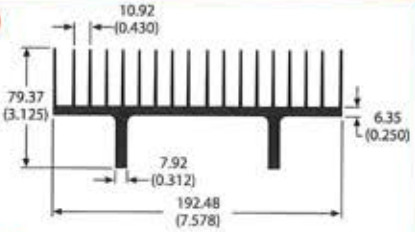

63155 5.6 lb/ft 0.97 °C/W/3in Per.=72.43

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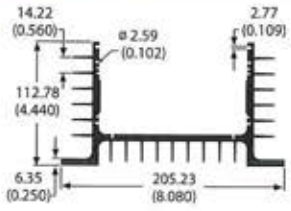


65130 6.2 lb/ft 1.06 °C/W/3in Per.=66.19

Extrusion Class Definitions

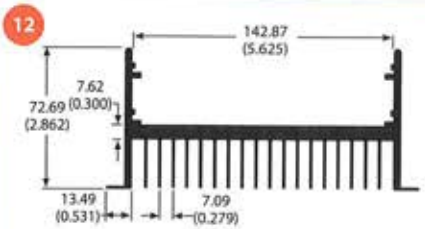
Each of our extrusions is coded with a popularity code / classification. Visit **www.aavidthermalloy.com**, go to the extrusion search tool section to view classification and current stock status.

Class A – Popular, >75% chance of some inventory available. (Coded in red lettering.)

Class B – Moderately popular material with a good chance of some inventory available.

Class C – Low demand / low usage material. Set up charge may apply at time of order if none in stock.

12



61350 4.4 lb/ft 1.19 °C/W/3in Per.=59.00

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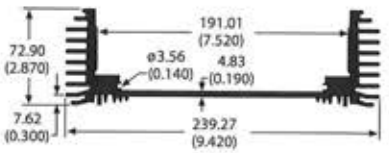

68020 6.1 lb/ft 1.37 °C/W/3in Per.=51.20

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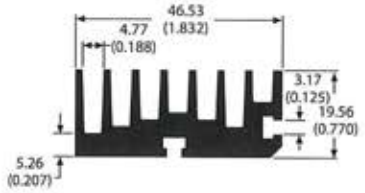

62675 0.9 lb/ft 5.80 °C/W/3in Per.=12.00

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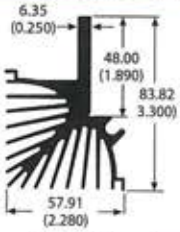

61820 2.6 lb/ft 1.94 °C/W/3in Per.=36.02

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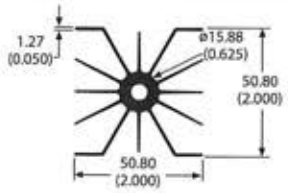

65930 0.9 lb/ft 2.96 °C/W/3in Per.=23.64

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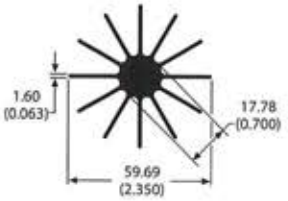

61925 1.2 lb/ft 3.30 °C/W/3in Per.=21.20

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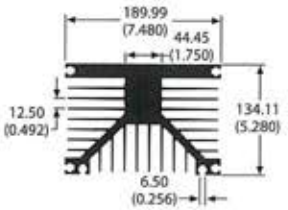


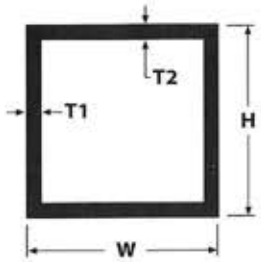
73110 18.99 lb/ft 0.50 °C/W/3in Per.=129.00

Structural Shapes

Aavid Thermalloy has access to a variety of Structural shapes (bar, L's, Square, rectangle, T's, tubes, etc.. Please provide us with the relevant dimension and quantity details and we will be able to provide you with pricing and lead time.

W = _____

H = _____



W = _____ T1 = _____

H = _____ T2 = _____

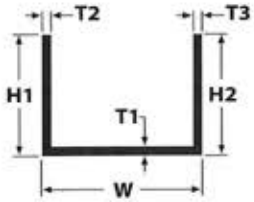
ID = _____

OD = _____

Contact your local representative or distributor with the dimensional details and voume of the shape you seek.

To find your local rep or distributor, please visit our Web Site at:

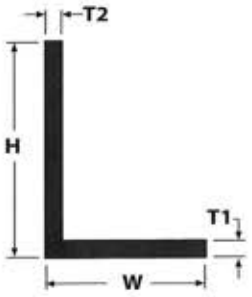
www.aavidthermalloy.com



W = _____ T1 = _____

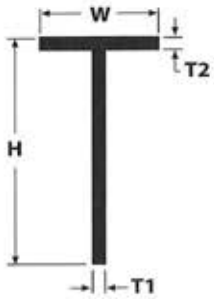
H1 = _____ T2 = _____

H2 = _____ T3 = _____



W = _____ T1 = _____

H = _____ T2 = _____



W = _____ T1 = _____

H = _____ T2 = _____

AMERICA
USA Tel: +1 (603) 224-9988 email: info@aavid.com

EUROPE
Italy Tel: +39 051 764011 email: sales.it@aavid.com
United Kingdom Tel: +44 1793 401400 email: sales.uk@aavid.com

ASIA
Singapore Tel: +65 6362 8388 email: sales@aavid.com.sg
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