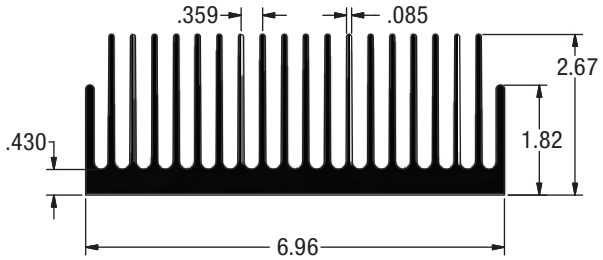
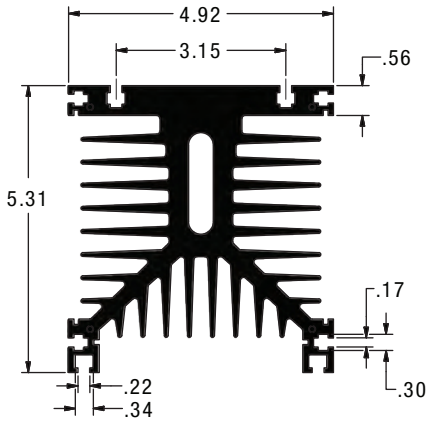
CHEH0012



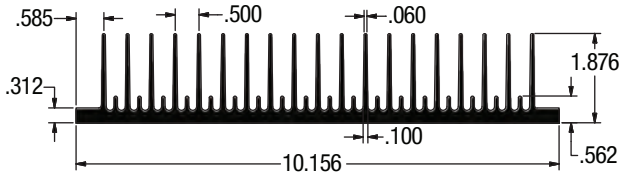
Per. 98.070 IN²/IN Wt. 9.50 LB/FT Θsa 0.700 ˚C/W/3”

CHEHK18



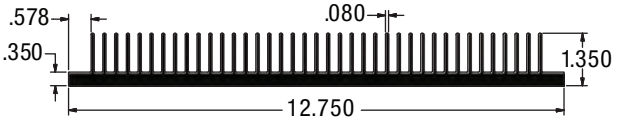
Per. 100.400 IN²/IN Wt. 11.80 LB/FT Θsa 0.700 ˚C/W/3”

CHEH4025



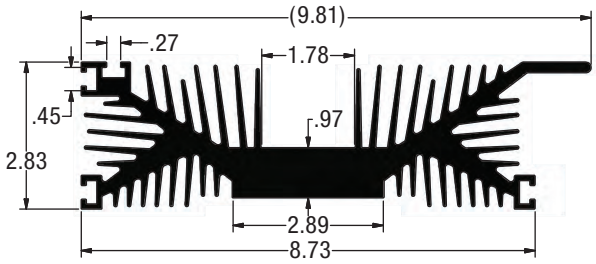
Per. 101.500 IN²/IN Wt. 6.60 LB/FT Θsa 0.670 ˚C/W/3”

CHEH3975



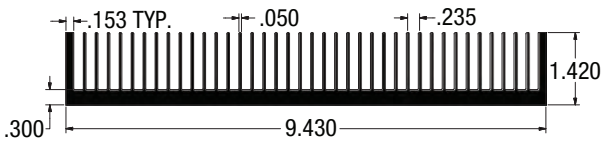
Per. 102.191 IN²/IN Wt. 9.10 LB/FT Θsa 1.000 ˚C/W/3”

CHEH0011



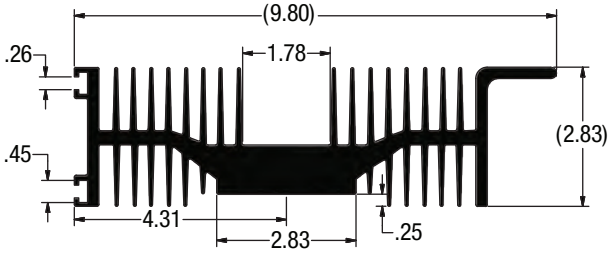
Per. 105.000 IN²/IN Wt. 12.81 LB/FT Θsa 0.710 ˚C/W/3”

CHEH0148



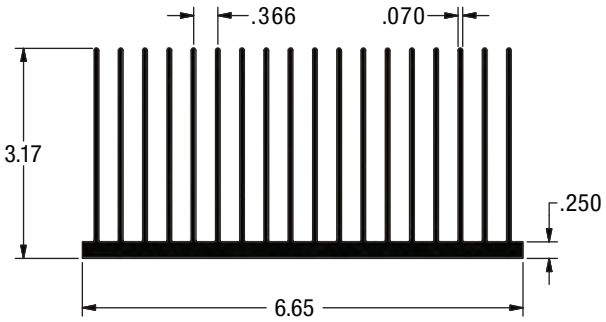
Per. 107.550 IN²/IN Wt. 6.17 LB/FT Θsa 0.700 ˚C/W/3”

CHEH0051



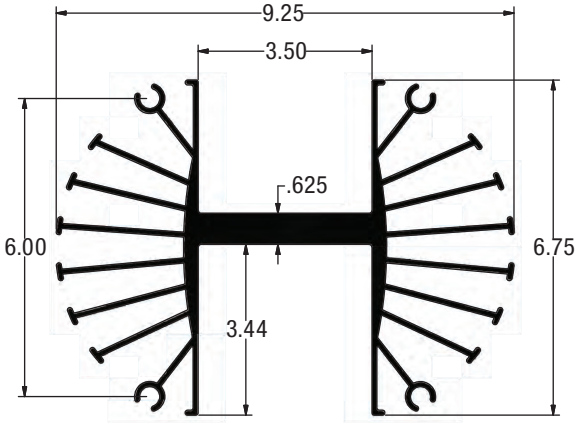
Per. 108.400 IN²/IN Wt. 11.10 LB/FT Θsa 0.700 ˚C/W/3”

CHEH3728



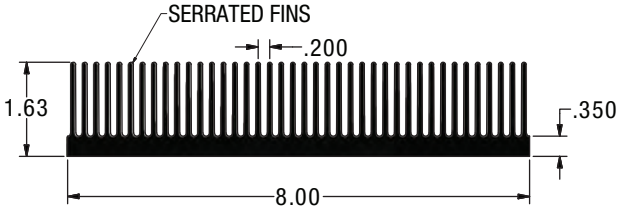
Per. 118.070 IN²/IN Wt. 6.40 LB/FT Θsa 1.060 ˚C/W/3”

CHEH0031



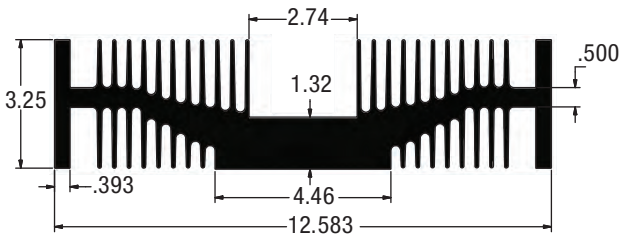
Per. 118.250 IN²/IN Wt. 9.60 LB/FT Θsa 0.400 ˚C/W/3”

CHEH3415



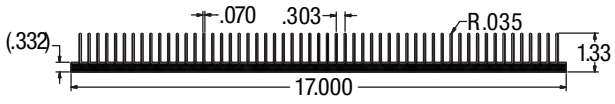
Per. 131.020 IN²/IN Wt. 6.15 LB/FT Θsa 0.800 ˚C/W/3”

CHEH0078



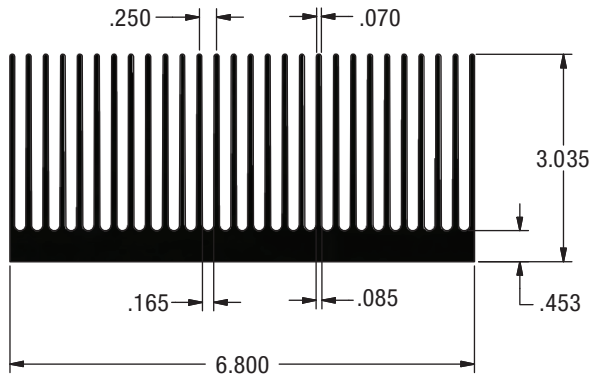
Per. 137.000 IN²/IN Wt. 23.75 LB/FT Θsa 0.550 ˚C/W/3”

CHEH3702



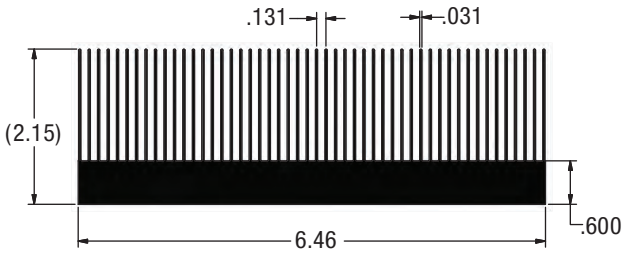
Per. 141.970 IN²/IN Wt. 11.04 LB/FT Θsa 0.490 ˚C/W/3”

CHEH0057



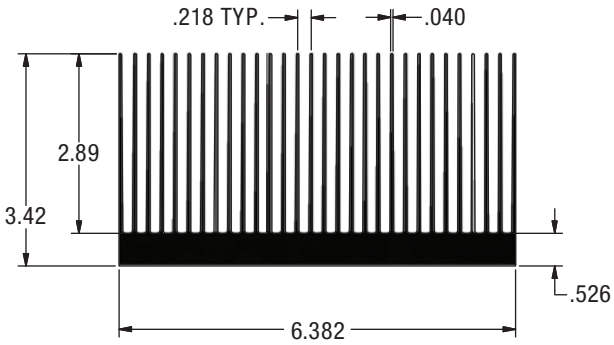
Per. 158.710 IN²/IN Wt. 10.05 LB/FT Θsa 0.480 °C/W/3”

CHEH0091



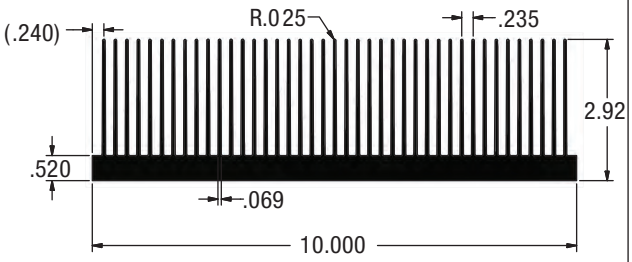
Per. 167.130 IN²/IN Wt. 7.29 LB/FT Θsa 0.094* °C/W/6”

CHEH0077



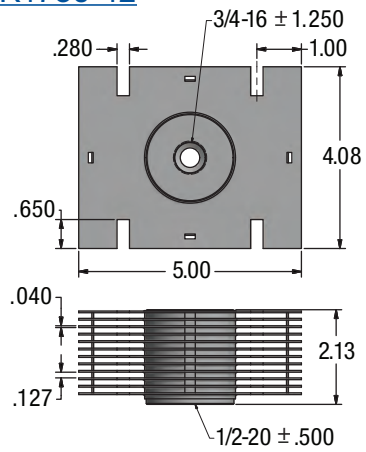
Per. 185.000 IN²/IN Wt. 8.86 LB/FT Θsa 0.085* °C/W/6”

CHEH3671



Per. 215.115 IN²/IN Wt. 13.25 LB/FT Θsa 0.350 °C/W/3”

CHEHK1750-12



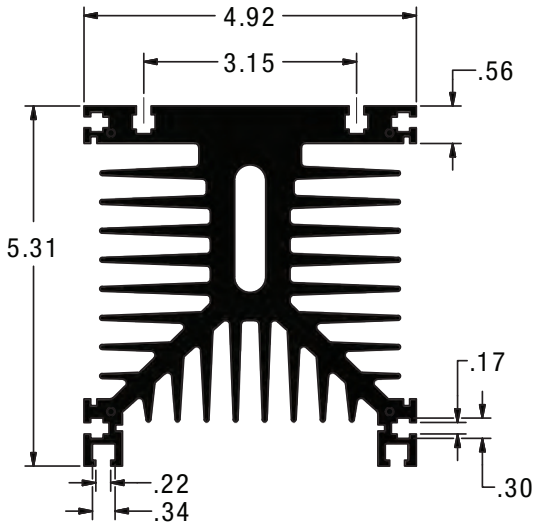
Θsa. 0.280 °C/W at 300 LFM Θsa. 0.190 °C/W at 500 LFM

In addition to the profiles depicted between pages 6-14, C&H Technology has access to an extensive library including hundreds of unique and high preforming heat sink profiles.

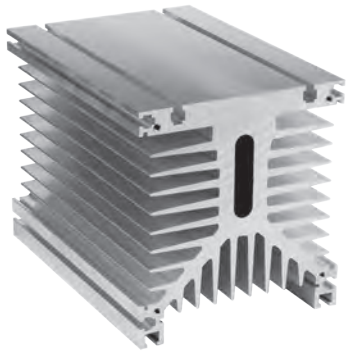
For more information on these profiles or to inquire about custom shapes, please visit our website at www.chtechnology.com or contact us at (800) 274-4284.

* Thermal Performances based on forced airflow of 500 LFM

CHEHK18 STANDARD HEAT SINK



Assembly Profile A





Standard Model	Perimeter (in²/in)	Width (in.)	Height (in.)	Length (in.)	Weight (lbs.)	Thermal Resistance (°C/W with 800 LFM airflow)
CHEHK18-120MM	100.40	4.92	5.31	4.72	4.70	0.60*
CHEHK18-120MM-A	100.40	4.92	5.31	4.72	5.10	0.14
CHEHK18-120MM-B	100.40	4.92	5.31	4.72	6.20	0.14
CHEHK18-120MM-C	100.40	4.92	5.31	4.72	6.30	0.14
CHEHK18-180MM	100.40	4.92	5.31	7.09	7.00	0.49*
CHEHK18-180MM-A	100.40	4.92	5.31	7.09	7.60	0.12
CHEHK18-180MM-B	100.40	4.92	5.31	7.09	8.70	0.12
CHEHK18-180MM-C	100.40	4.92	5.31	7.09	8.90	0.12
CHEHK18-300MM	100.40	4.92	5.31	11.81	11.60	0.38*
CHEHK18-300MM-A	100.40	4.92	5.31	11.81	12.70	0.09
CHEHK18-300MM-B	100.40	4.92	5.31	11.81	13.80	0.09
CHEHK18-300MM-C	100.40	4.92	5.31	11.81	13.90	0.09

* Thermal Performance based on natural convection

CHEHK18-120MM-__

Blank - Extrusion cut to determined length and plated with RoHS Compliant Clear Alodine 5200
A - Includes side and bottom baffle plates and fan mounting shroud
B - Includes 120mm, 100 CFM muffin type fan, and all accessories from "A"
C - Includes finger guard, AC cord, and all accessories from "B"
Standard Product - 120mm, 180mm, or 300mm lengths, flycut, includes fan mounting holes

Model CHEHK18 available in custom lengths in addition to standard configurations listed above.

BONDED FIN HEAT SINKS

C&H Technology offers bonded fin technology with models designed for both natural and forced air convection. Single, Double, and Triple Fan Bonded Fin Heat Sinks are available with thermal resistances as low as 0.0175°C/W. These Heat Sinks cool systems up to three times better than Extruded Heat Sinks (at the same mechanical size). Bonded Fin Heat Sinks offer tall fin heights with dense fin spacing. Individual fins are secured with an industrial thermal epoxy into a slotted base.

Standard Bonded Fin Heat Sinks can be tailored to your design with hole pattern, surface flycut, and plating finish.

Custom Bonded Fins are also available in a variety of base widths, fin heights, and fin spacings. For more information on custom bonded fin designs, see pages 22 and 23.

Call 800-274-4284 or email sales@chtechnology.com for questions or custom solutions.

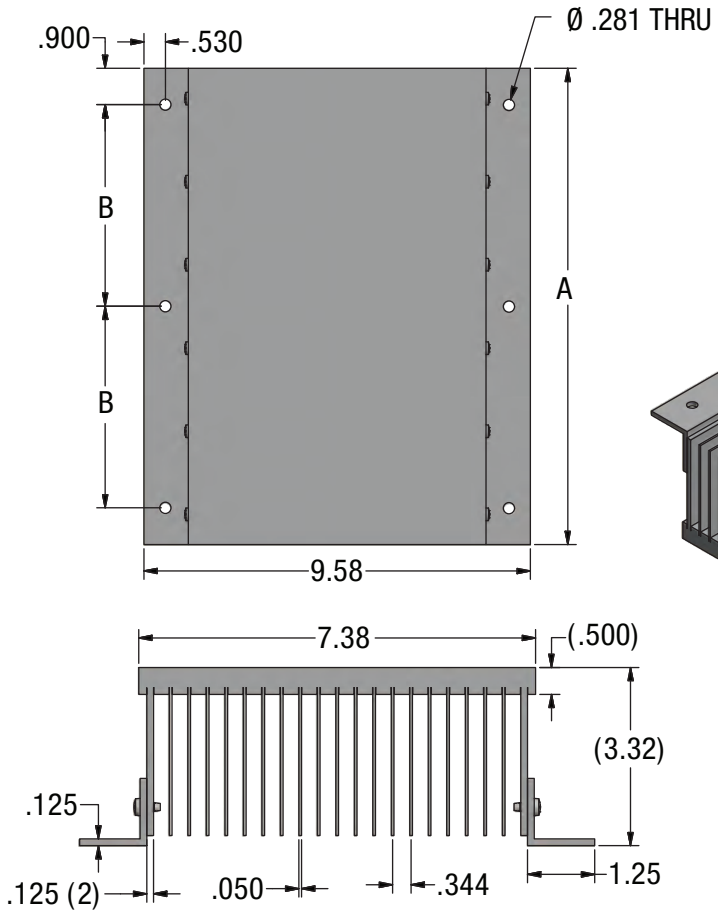
Model	Length (in.)	Width (in.)	Height (in.)	Weight (lbs)	Thermal Resistance (˚C/W) with 100 CFM fans	Assembly Profile	Page Number
CH5111	7.00	9.58	3.200	4.00	0.300*	---	17
CH5112	11.81	9.58	3.200	8.00	0.220*	---	17
CH5113	7.00	9.58	3.320	5.00	0.300*	---	17
CH5114	11.81	9.58	3.320	9.00	0.220*	---	17
CH5115F	9.50	7.28	5.250	5.60	0.080	---	18
CH5116F	14.50	7.28	5.250	9.20	0.060	Profile J	18
CH5117F	14.59	13.28	5.250	21.00	0.028	---	19
CH5118F	16.59	13.28	5.250	25.00	0.025	---	19
CH5119F	18.59	13.28	5.250	27.80	0.024	Profile K	19
CH5120F	14.59	17.50	5.250	28.00	0.020	---	20
CH5121F	16.59	17.50	5.250	31.40	0.019	---	20
CH5122F	18.59	17.50	5.250	35.10	0.018	---	20
CH6500F	5.00	5.00	1.500	2.10	0.100	---	21
CH6600F	8.00	5.00	1.500	3.10	0.080	---	21

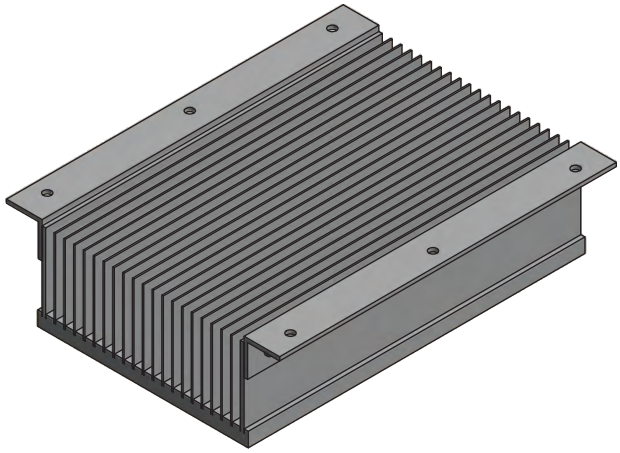
* Thermal Performance based on natural convection



NATURAL CONVECTION MODELS

Ideal for applications where forced air-cooling is not an option. While maintaining a similar thermal resistance, natural convection Bonded Fin Heat Sinks require half the amount of space as Extruded Heat Sinks. ***Custom designs are available upon request.***



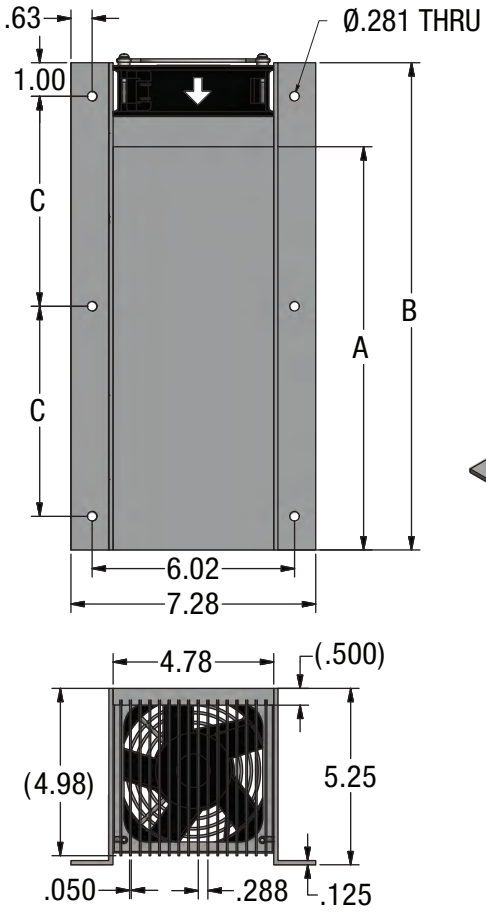


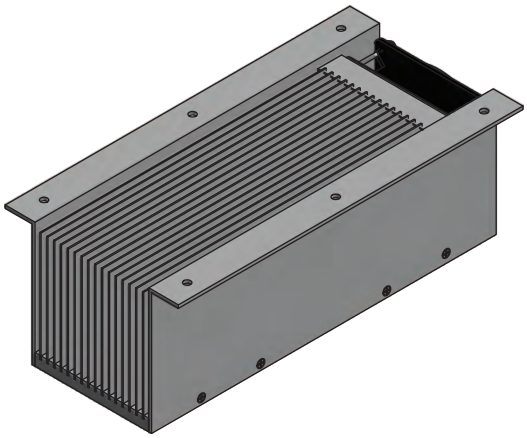
NATURAL CONVECTION SPECIFICATIONS				
MODEL #	**CH5111**	**CH5112**	**CH5113**	**CH5114**
Dimension A	7.00”	11.81”	7.00”	11.81”
Dimension B	2.50”	5.00”	2.50”	5.00”
Flanges	None	None	1.25” Wide	1.25” Wide
Thermal Resistance	0.30°C/W	0.22°C/W	0.30°C/W	0.22°C/W

Information printed in this section has been developed by dimensioning for general applications. C&H Technology is prepared to give assistance on all engineered Heat Sinks by utilizing computer software designed specifically for this type of Heat Sink.

FORCED CONVECTION – SINGLE FAN MODELS

Increased thermal performance over natural convection Bonded Fin Heat Sinks. Ideal for applications where high thermal density semiconductors, such as Power MOSFETs and IGBTs, are used. Models available fully equipped with a ball-bearing fan. ***Custom designs are available upon request.***



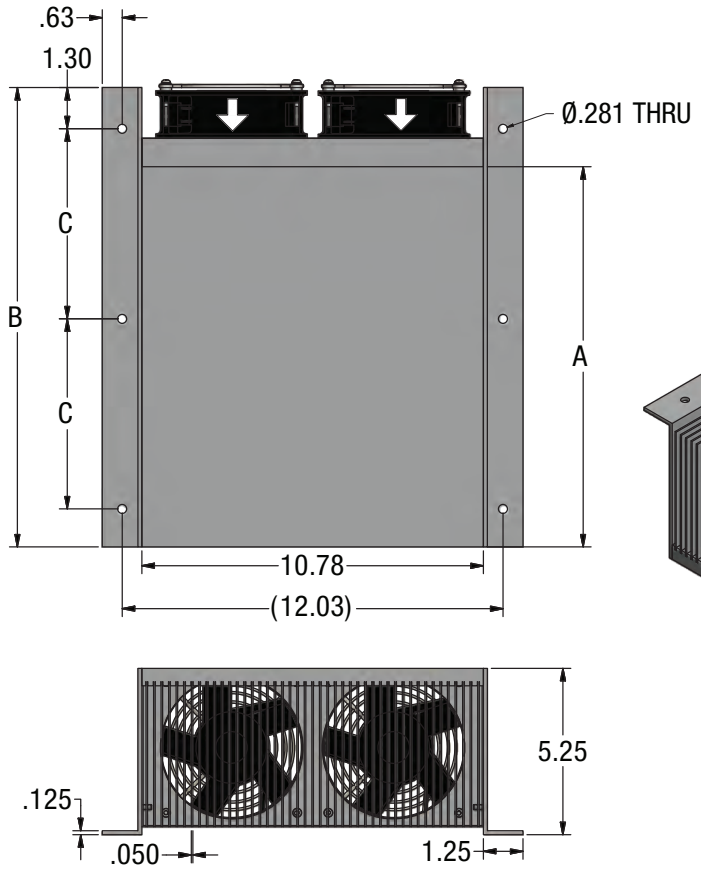


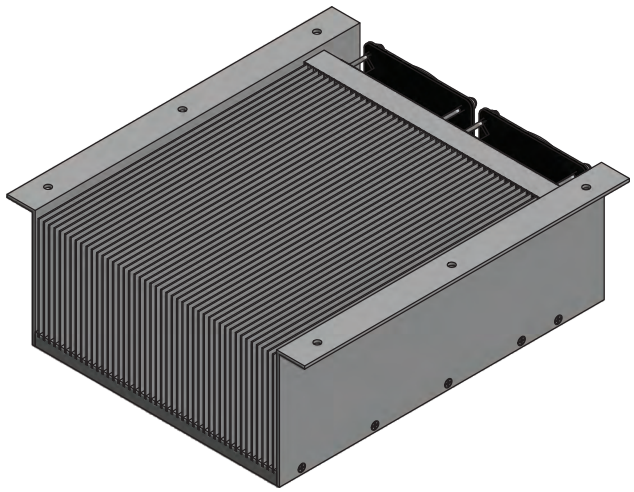
FORCED AIR CONVECTION - SINGLE FAN MODELS		
MODEL #	**CH5115F**	**CH5116F**
Dimension A	7.00”	11.81”
Dimension B	9.50”	14.50”
Dimension C	3.75”	6.25”
Thermal Resistance	0.08°C/W	0.06°C/W

Thermal performances based on 100 CFM fan. Mounting pattern shown fits standard “muffin” fans.

FORCED CONVECTION – DOUBLE FAN MODELS

Ideal for designs with large IGBT, Diode, and SCR Modules in high wattage applications. Exceptional thermal performances as low as 0.024°C/W – more effective cooling per cubic inch compared to Extruded Heat Sinks. Models available fully equipped with ball-bearing fans. ***Custom designs are available upon request.***



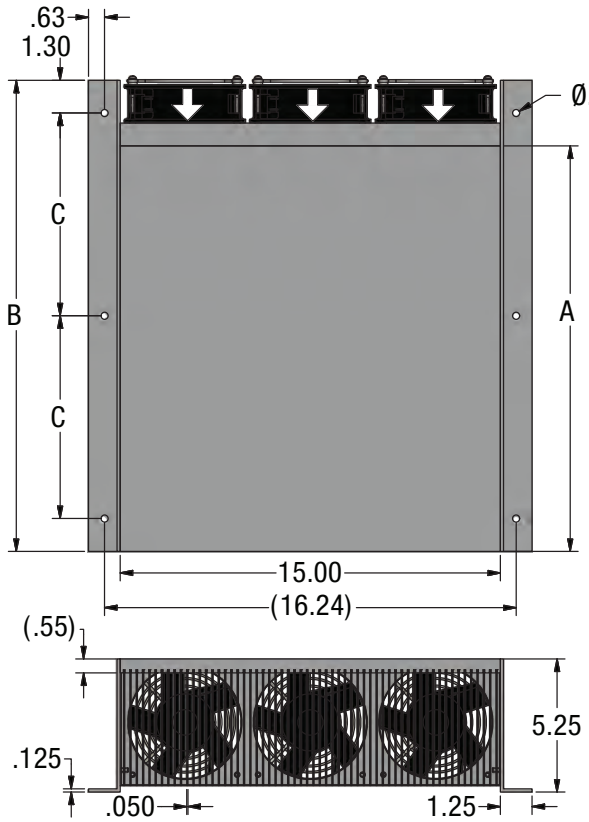


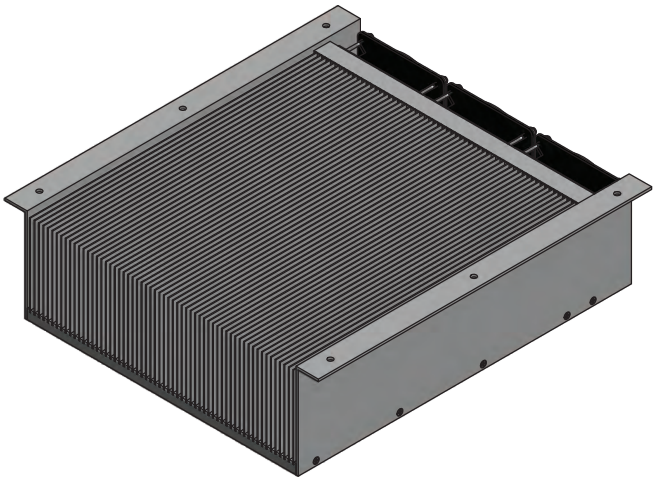
FORCED AIR CONVECTION - DOUBLE FAN MODELS			
MODEL #	**CH5117F**	**CH5118F**	**CH5119F**
Dimension A	12.00”	14.00”	16.00”
Dimension B	14.50”	16.59”	18.59”
Dimension C	6.00”	7.00”	8.00”
Thermal Resistance	0.028°C/W	0.025°C/W	0.024°C/W

Thermal performances based on 100 CFM fan. Mounting pattern shown fits standard “muffin” fans.

FORCED CONVECTION – TRIPLE FAN MODELS

Triple Fan Forced Convection Heat Sinks have the highest watt per cubic inch performance over other Bonded Fin Heat Sink designs. Semiconductor modules can be mounted parallel to the Heat Sink fins to eliminate upstream heating effect. This allows for multiple IGBTs, Diodes and SCRs to operate at the same temperature and increase system reliability. Models available fully equipped with ball-bearing fans. ***Custom designs are available upon request.***



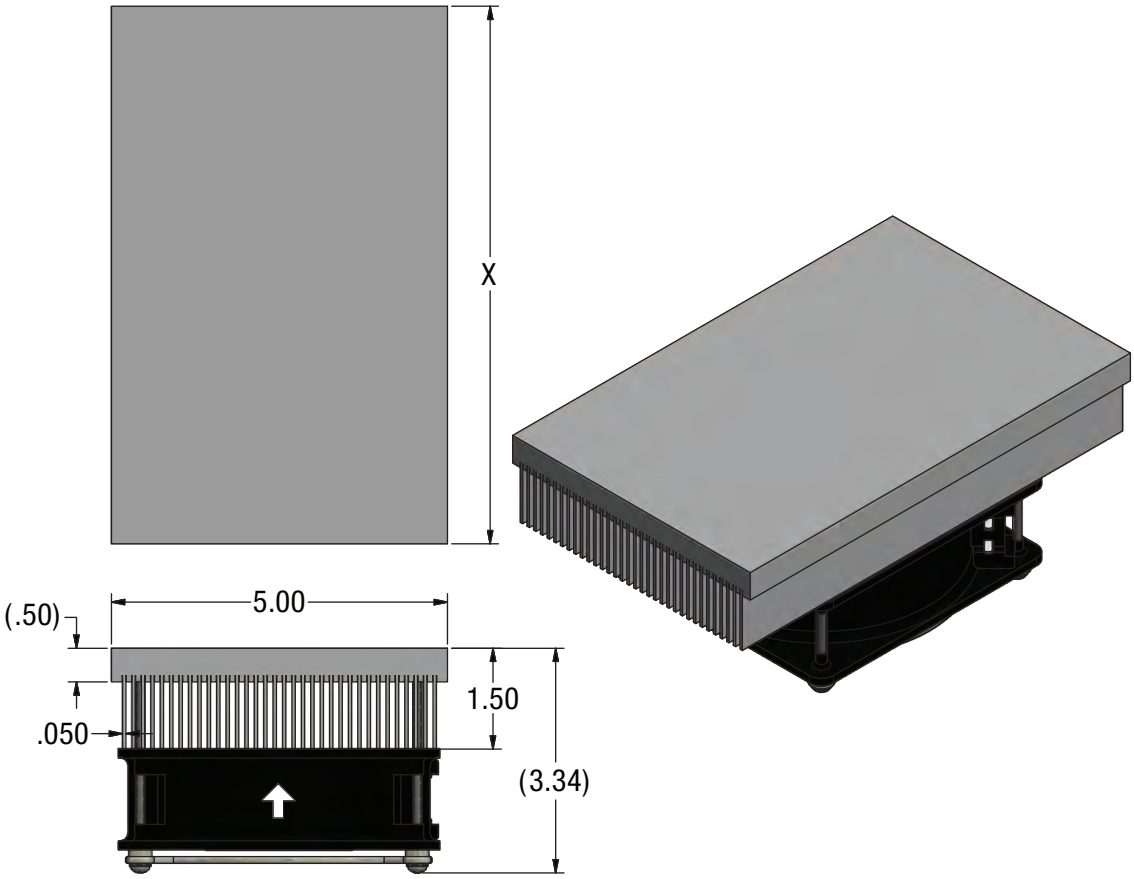


FORCED AIR CONVECTION - TRIPLE FAN MODELS			
MODEL #	**CH5120F**	**CH5121F**	**CH5122F**
Dimension A	11.81”	14.00”	16.00”
Dimension B	14.59”	16.59”	18.59”
Dimension C	6.00”	7.00”	8.00”
Thermal Resistance	0.020°C/W	0.019°C/W	0.0175°C/W

Thermal specifications are based on 600 LFM airflow. Mounting pattern shown fits standard “muffin” fans.

IMPINGEMENT HEAT SINK

Ideal for IGBT and power MOSFET applications as well as Diode and SCR Bridges. The impingement cooling allows modules to be mounted close together while keeping an extremely low cost per watt. This results in all modules in a system to operate at the same temperature increasing system reliability. Additionally, the close mounting structure allows for shorter bus bars that reduces cost and lowers circuit inductance. The impingement style Heat Sinks provide very high performance cooling in a small package. ***Custom designs are available upon request.***



POWER-PAK IMPINGEMENT COOLING		
MODEL #	**CH6500F**	**CH6600F**
Dimension X	5.00”	8.00”
Thermal Resistance	0.10°C/W	0.08°C/W

Thermal performances based on 100 CFM fan. Mounting pattern shown fits standard “muffin” fans.

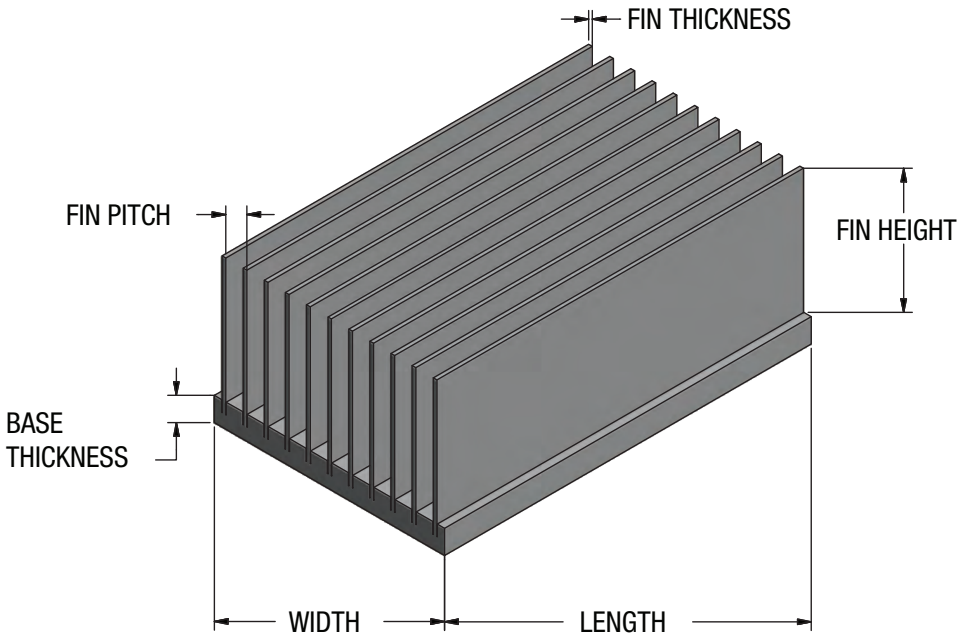
CUSTOM BONDED FIN HEAT SINKS

Forced air and natural convection profiles are available in a variety of plating finishes. The ability to choose from various configurations enables the engineer to tailor the Heat Sink profile to meet the specific thermal needs of the application. By using the chart on the following page, fin spacing, profile width, Heat Sink length, fin height, and mounting options can all be selected. Thermal resistances are calculated for the industry's common fin heights with 500 LFM airflow and a Heat Sink length of 5 inches. Increases in airflow, fin height, and Heat Sink length will all result in high thermal performances.

Create your own custom Bonded Fin Heat Sink using the example below and charts on the following page. Heat Sinks are selected from the table of options using the following format:

CHE01 1A 2B F N

- **N** — Plating Options: Gold Iridite, Clear Chromate, etc.
- **F** — Mounting Options: Mounting Legs, Fan Brackets, Fans Installed.
- **2B** — Heat sink overall length in inches.
- **1A** — Fin height in half-inch increments.
- **CHE01** — Base Profile – includes base thickness, fin spacing, number of fins, fin pitch, fin thickness, and base width.



CHE01 1A 2B F N

Plating Options
N - Natural Finish (Wash)
L - Clear Alodine 5200
G - Gold Iridite
T - Type II Trivalent
C - Clear Chromate
A - Clear Anodized
O - Other (please specify)

Mounting Options
F - Fan Installed
H - Fan Shroud & Legs
L - Leg Mounts
W - No Brackets

Fin Height (in.)
1A - 1.50
1B - 2.00
1C - 2.50
1D - 3.00
1E - 3.50
1F - 4.00
1G - 4.50
1H - 5.00
1I - 5.50

Base Length (in.)	
2A - 2.00	2K - 12.00
2B - 3.00	2L - 13.00
2C - 4.00	2M - 14.00
2D - 5.00	2N - 15.00
2E - 6.00	2O - 16.00
2F - 7.00	2P - 17.00
2G - 8.00	2Q - 18.00
2H - 9.00	2R - 19.00
2I - 10.00	2S - 20.00
2J - 11.00	---

CUSTOM ENGINEERED PROFILES (measurements in inches)							Thermal Resistance Examples (°C/W)	
Base #	Base Width	Base Thickness	Fin Thickness	# of Fins	Fin Pitch	Fin Spacing	2" Fin Height	4" Fin Height
01	1.20"	0.37"	0.040"	8	0.150"	0.110"	0.50	0.26
02	2.37"	0.26"	0.040"	18	0.132"	0.092"	0.25	0.13
03	2.40"	0.25"	0.032"	16	0.150"	0.118"	0.25	0.12
04	4.00"	0.50"	0.050"	20	0.200"	0.150"	0.20	0.11
05	4.60"	0.37"	0.040"	30	0.150"	0.110"	0.13	0.07
06	4.75"	0.62"	0.050"	20	0.236"	0.186"	0.20	0.10
07	4.78"	0.50"	0.063"	16	0.288"	0.225"	0.24	0.13
08	4.78"	0.60"	0.050"	20	0.228"	0.178"	0.20	0.10
09	5.00"	0.52"	0.040"	39	0.150"	0.085"	0.12	0.06
10	5.65"	0.50"	0.050"	28	0.200"	0.150"	0.15	0.07
11	6.25"	0.60"	0.050"	33	0.158"	0.135"	0.13	0.06
12	6.61"	0.50"	0.050"	33	0.200"	0.150"	0.12	0.06
13	6.80"	0.50"	0.050"	34	0.200"	0.150"	0.12	0.06
14	6.93"	0.39"	0.050"	46	0.150"	0.100"	0.11	0.06
15	7.38"	0.50"	0.050"	19	0.340"	0.290"	0.30	---
16	7.37"	0.50"	0.080"	20	0.364"	0.284"	0.22	0.12
17	8.00"	0.50"	0.040"	63	0.125"	0.085"	0.07	---
18	8.06"	0.57"	0.032"	64	0.125"	0.093"	0.07	0.04
19	8.35"	0.56"	0.050"	33	0.238"	0.188"	0.14	0.07
20	10.78"	0.55"	0.050"	45	0.238"	0.188"	0.09	0.05
21	11.25"	0.60"	0.050"	44	0.250"	0.200"	0.10	0.05
22	12.00"	0.54"	0.040"	95	0.125"	0.085"	0.08	---
23	12.45"	0.54"	0.050"	60	0.185"	0.135"	0.06	0.03
24	15.00"	0.58"	0.050"	60	0.250"	0.200"	0.07	0.04
25	17.00"	0.50"	0.090"	49	0.348"	0.258"	0.08	0.04

LIQUID COOLING THERMAL MANAGEMENT

Available thermal resistances as low as 0.004°C/W, our Liquid Cooled Heat Sinks are ideal for cooling Rectifiers, SCRs, and IGBTs, along with other high-power modules and puk-style devices. These chill plates can handle extremely high power densities in a small footprint. C&H Technology offers traditional chill plates, chill blocks, and patented Friction Stir-Welded plates.

Copper Press-In Tube Chill Plates

Available in our standard offering of 1-6 channel passes. The copper is embedded into the milled channel of an aluminum plate. These plates are designed primarily for the high-power inverter markets and are ideal for cooling large Diode, SCR, and IGBT Modules. They are available with drilled and tapped holes for mounting of the semiconductors and brackets.
Custom configurations are also available.

Model CH8040

This double-sided copper chill plate with an internal fin structure provides a very low thermal resistance and low pressure drop. The plate has a nickel finish with brazed hose barb fittings. The CH8040 has the highest heat exchange rate of the standard products.

Friction Stir-Welded Chill Plates

Used in high performance applications for industries in renewable energy, high-speed rail, electric vehicle, and many more. This innovative technology provides uniform cooling of power electronic devices from 30kW to 250kW with chill plates comprised solely of aluminum. Manufactured using the unique **friction stir-welding** process to incorporate exceptional cooling structures with low pressure drops.

Copper Chill Blocks

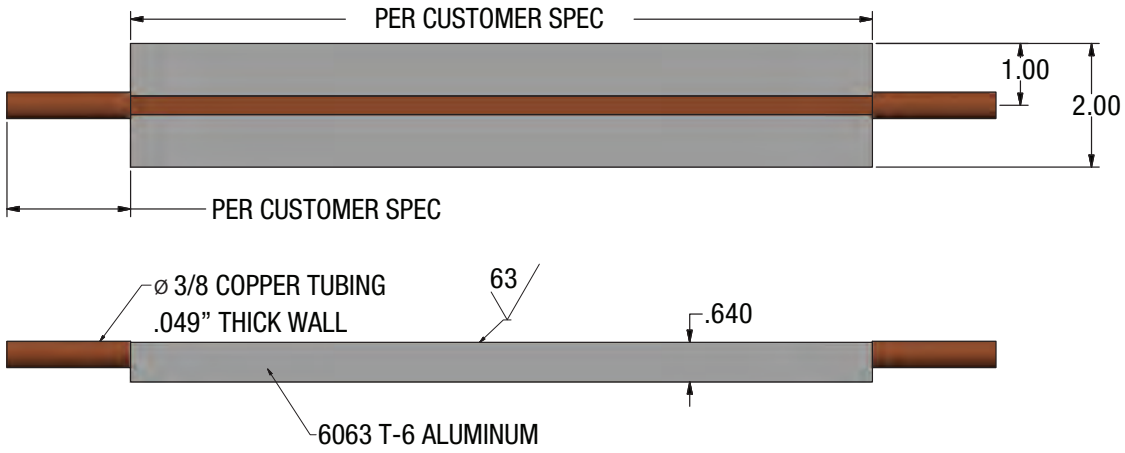
Available in two options, **cast copper** and **furnace brazed copper** chill blocks. These nickel-plated blocks operate at similar thermal performance to one another and are used for cooling applications requiring disc (puk) type semiconductors.

For all types of chill plates and blocks, larger sizes are available upon request.
Call 800-274-4284 or email sales@chtechnology.com for questions or Custom Solutions.

LIQUID CHILL PLATE – 1 AND 2 PASS MODELS

Low thermal resistance, ideal for cooling IGBT or other high wattage modules. Can handle extremely high heat concentrations with lower device temperature rise. Maintains lower overall junction temperatures. Precision machined module mounting surface. ***Custom designs are available upon request.***

1-Pass Model: CH8001



2-Pass Model: CH8002

