

1. Introduction

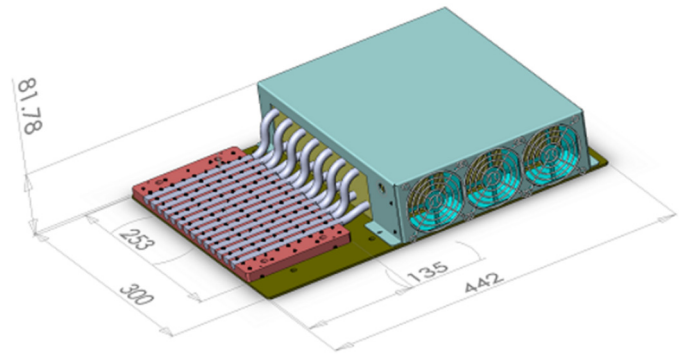
Model EHS-025 is a compact light weight heatsink module, employing the state-of-the-art LED cooling technology, designed for general cooling of high heat flux devices, such as high power IGBT modules and high power lasers. The key features are:

- a) Boasts impressive $0.025^{\circ}\text{C}/\text{w}$ thermal resistance, capable of dissipating 500w of heat in 22°C typical lab environment for diodes rated at 35°C case temperature.
- b) 14 large heatpipes that transfer and spread heat throughout the structure. Users are advised to place the diodes in a way that the heat source spreads over as many heatpipes as possible to take advantage of the heatpipes.
- c) Fits in a 2U 19" rack mount chassis.
- d) Base plate acts as mini optical table with pre-tapped 4-40 threaded holes on $14.5\text{mm} \times 14.5\text{mm}$ grid. Optional clamps and shims enable users to place the diode anywhere on the base plate.
- e) Removable bottom carrying plate and fan assembly, so users may incorporate the EHS core for integrating into OEM systems.
- f) Carrying plate provides pre-drilled holes for 8-32 screws or $\frac{1}{4}$ -20 screws on 1" pattern for securing EHS-025 on any optical tables
- g) Custom thermoelectric cold plate based on EHS-025 that provides up to 550w Q_{max} is available
- h) Fans may be PWM modulated to lower noise for less demanding cooling scenarios

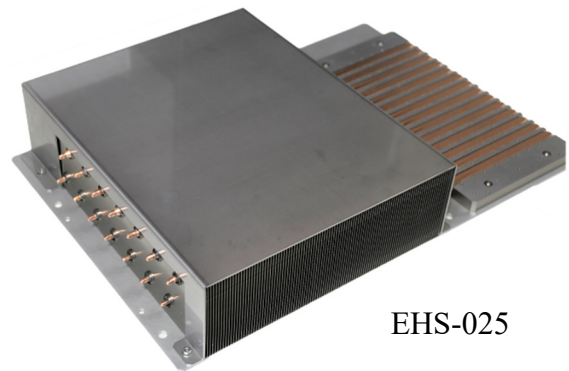
EHS-025 comes with a high quality terminal block with 20A rating per contact for fan wiring and high power laser wiring. The 3 high power fans are concealed inside of the air duct, reducing the noise significantly.

2. Performance

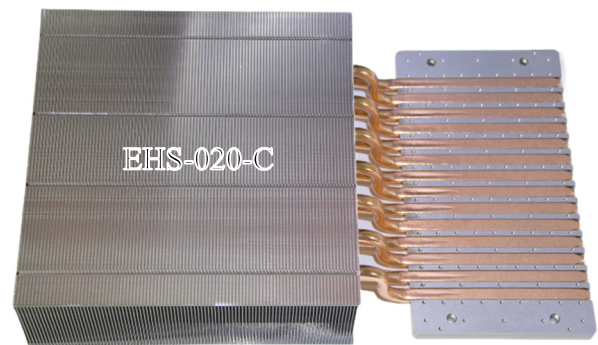
The thermal resistance of model EHS-025 is $0.025^{\circ}\text{C}/\text{w}$ from heatsink to ambient. The performance improves further for devices with higher operating temperatures.



EHS-025



EHS-025



3. Cooling Fan Options, Specifications

There are 3 cooling fans wired in parallel. We offer 3 options and the table below summarizes the key performance parameters of each option:

Model #	EHS-020-C	EHS-035	EHS-025
Description	EHS-020 heatsink core only, w/o carrying plate, fan duct and fans	EHS-025 with quieter fans, reduced performance	Standard EHS-025
Weight (lbs)	11.4	17.2	17.2
Thermal resistance (°C/w)	<0.02°C/w achievable with high flow fans	0.035	0.025
Fan's rated voltage	N/A	12VDC	12VDC
Fan's operating voltage range	N/A	7 – 13.2VDC	7 – 13.8VDC
Input power/fan	N/A	5.76w	18.5w
Rated current/fan	N/A	0.7A	1.54A
Noise/fan	N/A	50.5dBA	58dBA

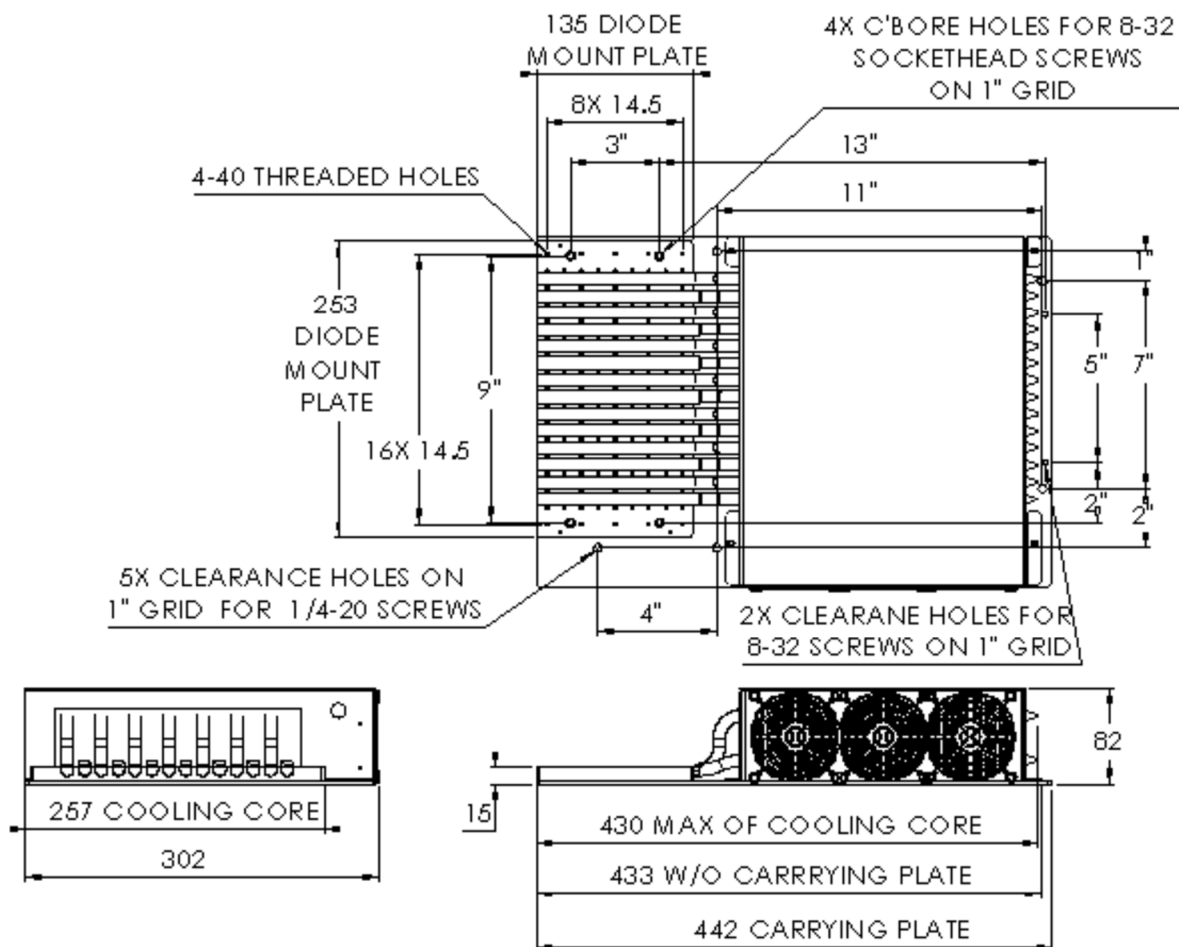
4. Pin outs of terminal block

Pin 1	
Pin 2	
Pin 3	Fan +
Pin 4	Fan -
Pin 5	Fan tachometer
Pin 6	Fan PWM control (special request only)

5. Diode mounting and optional accessories

The cooling-core of EHS-025 consists of the mini-table base plate, 14 heatpipes and cooling fins all soldered together into a single piece. It is removable from EHS-025, enabling users to integrate into OEM systems.

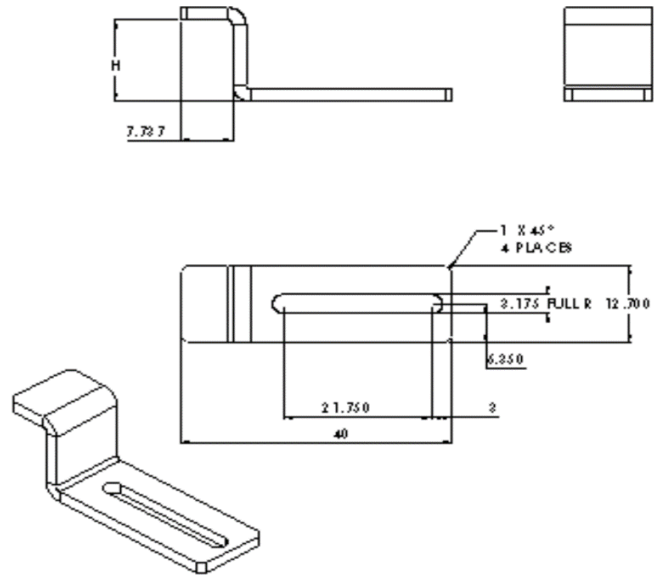
The base plate of the cooling-core serves as a mini optical table. At 135mm wide x 253mm long x 12mm thick, it can accommodate all the popular high power lasers or multiple lower power lasers. The 4-40 threaded holes are on 14.5 x 14.5 grid.



The mounting slot of the optional clamps is sized to slide continuously through the entire length of the grid, always provide access to two 4-40 threaded holes, so that the diode can be clamped at almost any position.

Various optional shims are also available to accommodate the range of heights of popular diodes. The total height of the stack of clamp and shims should be about 0.5mm lower than the height of the diode, so that the deflection of the clamp will provide the clamping force necessary to press the diode on the base plate either directly or with thermal pad in between.

P/N	Description	
C-07	H=6.5 for 7mm diode height	
C-14	H=13.5 for 14mm diode height	
C-21	H=20.5 for 21mm diode height	
S-0.5	0.5mm shim	
S-1	1mm shim	
S-2	2mm shim	



There are five 1/4-20 clearance holes and six 8/32 clearance holes in the carrying plate on 1" grid for users to mount EHS-025 on optical table.

The carrying plate maybe replaced by a larger plate with optional heat spreaders for other heat sources that tolerate operating temperatures higher than diodes.

The optional heat spreaders has integral vapor channels to minimize spreading resistance economically.

6. Pricing and availability

For pricing and availability, please contact ETE:

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