PRODUCT SPECIFICATIONS
800W Optical Laser Engine
OLE06A0010DC Rev. 00
PRELIMINARY
1080nm fiber laser engine

Product code

O	L	E	0	6	A	0	0	1	0	D	C

Power and pump input ports options. See section 1.0

Termination options. See section 5.0

Cooling plate option. See section 2.0

Red Tracker option. See section 3.0

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1.0 Optical and Operation Specifications

Item	Specifications	Min.	Typ.	Max.	Unit	Notes
1.01	Laser wavelength	1075	1080	1085	nm	At $T=T_N$
1.02	Laser linewidth	1.0			nm	
1.03	Pump wavelength *	908	915	928	nm	At $T=T_N$, CW regime
1.04	Polarization	Random				
1.05	Operation regime	CW				
1.06	Warm-up time			30	min	Within 2% after 1min
1.07	Optical power stability			±1	%	At constant T and $P=P_{max}$ over 1h

* 95% of pump energy must be within these limits over the full operation range

Power and input ports options

	OLE	0	6	A	0	0	1	0	D	C	**800 W class laser engine**				
1.08	Output power (P_{Max})[1]												800	W	At $T=T_N$, CW
1.09	Optical-Optical Efficiency[1]											71		%	BOL. At $T=T_N$, CW

[1] At rated power output.

1.10	OLE	**0**	**6**	A	0	0	1	0	**D**	C	**Pump input ports**: 135/155 um NA=0.22[2]				
1.11	Maximum power per pump port												270	W	Do not exceed maximum output power (1.08)

[2] Designed to be used at NA=0.17 (95% of energy within NA=0.15)

1.12	Pump input pigtails length	1.5			m	

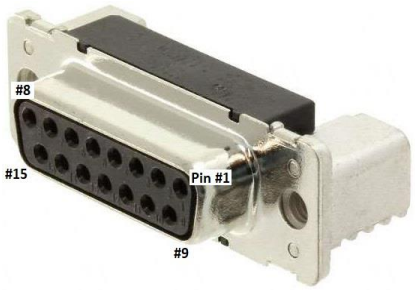
2.0 Environmental specifications

Item	Specifications	Min.	Typ.	Max.	Unit	Notes
2.1	Nominal operating temperature (T_N)			70	°C	T1 reading. See user manual
2.2	Operating temperature range	18	20	22	°C	Cooling temperature
2.3	Storage temperature	-40		70	°C	
2.4	Relative humidity			80	%	Non condensing
2.5	Cooling Method	conduction via bottom surface				
2.6	Case temperature monitoring	Via installed thermistors				See electrical pinout, Calibration recommended
2.7	Cooling plate	Not included	O L E 0 6 A			0 0 1 **0** D C

3.0 Red tracker / Visible pilot

Item	Specifications	Min.	Typ.	Max.	Unit	
3.1	Red Tracker	Not included	O L E 0 6 A			**0** 0 1 0 D C

4.0 Electronics specifications

<table>
<tr><th>Item</th><th colspan="6">Description</th><th>Specification</th><th>Notes</th></tr>
<tr><td>4.1</td><td colspan="6">Communication interface</td><td>DB-15 connector</td><td></td></tr>
<tr><td rowspan="16">4.2</td><td colspan="8">Communication interface Pin assignment</td></tr>
<tr><td colspan="2">PIN</td><td>Name</td><td>Direction</td><td>Type</td><td colspan="2">Description</td></tr>
<tr><td>1</td><td></td><td>Therm1</td><td>OUT</td><td>Analog 0 to 5V</td><td colspan="2">Temperature monitor 1</td></tr>
<tr><td></td><td>9</td><td>GND</td><td>-</td><td></td><td colspan="2"></td></tr>
<tr><td>2</td><td></td><td>Therm2</td><td>OUT</td><td>Analog 0 to 5V</td><td colspan="2">Temperature monitor 2</td></tr>
<tr><td></td><td>10</td><td>VCC+</td><td>-</td><td></td><td colspan="2">Thermistor bias voltage</td></tr>
<tr><td>3</td><td></td><td>Therm3</td><td>OUT</td><td>Analog 0 to 5V</td><td colspan="2">Temperature monitor 3</td></tr>
<tr><td></td><td>11</td><td>GND</td><td>-</td><td></td><td colspan="2"></td></tr>
<tr><td>4</td><td></td><td>Photodiode1</td><td>OUT</td><td>Analog 0 to 5V</td><td colspan="2">Back Reflection Power Monitor</td></tr>
<tr><td></td><td>12</td><td>GND</td><td>-</td><td></td><td colspan="2"></td></tr>
<tr><td>5</td><td></td><td>Photodiode 2</td><td>OUT</td><td>Analog 0 to 5V</td><td colspan="2">Output Power Monitor</td></tr>
<tr><td></td><td>13</td><td>GND</td><td>-</td><td></td><td colspan="2"></td></tr>
<tr><td>6</td><td></td><td>RP current</td><td>IN</td><td>Analog input current</td><td colspan="2">Red pointer current input</td></tr>
<tr><td></td><td>14</td><td>Fiber fuse A</td><td>-</td><td></td><td colspan="2">Fiber fuse A (protection)</td></tr>
<tr><td>7</td><td></td><td>Fiber fuse B</td><td>-</td><td></td><td colspan="2">Fiber fuse B (protection)</td></tr>
<tr><td></td><td>15</td><td>Intrlck A</td><td>-</td><td></td><td colspan="2">QHB Interlock A (if option)</td></tr>
<tr><td>8</td><td></td><td>Intrlck B</td><td>-</td><td></td><td colspan="2">QHB Interlock B (if option)</td></tr>
<tr><td>4.3</td><td colspan="6">Connector Pin Numbering</td><td colspan="2"> 
</td></tr>
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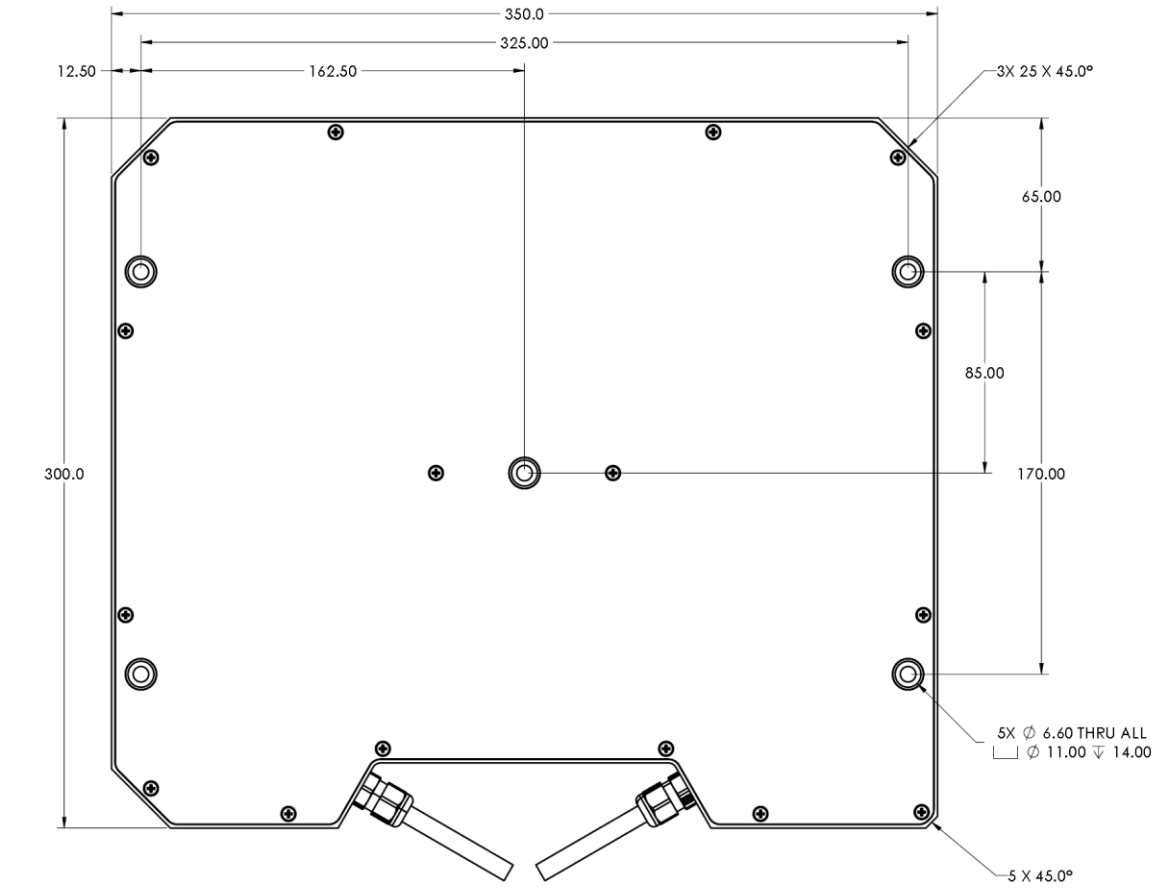
5.0 Delivery fiber and termination options

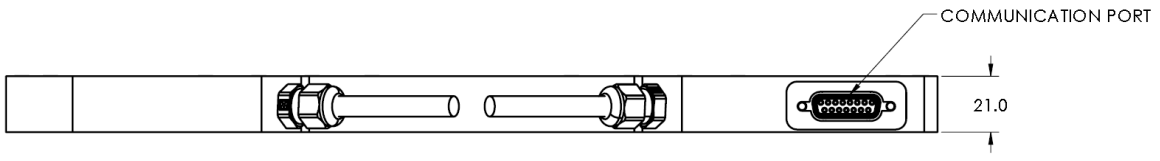
Option : **Bare Fiber Output**

Item	Specifications	Min.	Typ.	Max.	Unit	Notes
5.1	OLE 0 6 A 0 **0** **1** 0 D **C**	Delivery fiber: **14/250um NA=0.07/0.46**				
	Delivery fiber jacket	Armored cable				Length: 25cm
	Delivery fiber bend radius			80	mm	
	Beam quality (M^2)		1.05		-	
	Delivery fiber length	3		3.5	m	
	Note	Do NOT operate without proper high power termination (QBH cable, for example)				

6.0 Mechanical specifications and drawings

Item	Specifications		Unit	Notes
6.1	Dimensions (excluding cable extrusions)	300 x 350 x 21	mm	see drawing
6.2				





7.0 Product Data Report - supplied with every unit

Item	Data
7.1	**Optical-Optical Efficiency**

8.0 Additional features

Item	Note
8.1	Do not operate without proper high power termination (QBH cable, for example)
8.3	Pump diodes and electrical drivers not included.

Note: See Operation Instructions documents for more details and features

9.0 Safety and specific precautions

Item	Note
9.1	The Optical Laser Engine product is a passive sub-component for laser systems, and does not include all safety features required by IEC-60825-1:2007-03 2nd edition sections 4.3 to 4.12 for laser systems, as defined by section 3.48. The end product manufacturer has the responsibility to provide the necessary features to meet compliance level as required by relevant national regulations.
9.2	For your safety, never open the protective housing (case). Warranty is void if case is opened.
9.3	The module's case temperature must be maintained within the range specified in the environmental specifications section at all times. Its entire bottom surface MUST be appropriately heat sinked and its case temperature can be monitored using the built-in thermistors. A room temperature, power off, calibration is recommended. See Operation Instructions for more details.
9.4	To avoid irreversible damage and loss of power, fiber terminations (connectors, collimators...) must remain perfectly clean and scratch free.
9.5	The laser engine module case is not ESD or EMI sensitive.

10.0 Document change history

Rev.#	Date	Ref. (#DC)	Change Description	Approved by
00		n/a	Document created	LDM

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