

## 1.4.2.3 Standard Customized Solutions (OEM) Thermal Sensors

### 300mW to 100W

#### Features

- Conduction cooled
- UAF version can give analog voltage output or digital RS232 output and can measure power or energy. Can also have multiple switchable ranges and/or multiple switchable wavelengths
- UAU and UAE versions are similar to the UFA version but UAU operates via the USB terminal of the PC and UAE via an Ethernet connection

L30C-SH / UAF /  
UAU / UAE



L30C-LP2-26-SH



These specifications refer to standard OEM sensors, and are to be understood as generic, describing sensor families. Ophir will be happy to help you with a specific solution for your particular application.

Model	L30C-SH	L30C-LP2-26-SH	L30C-UAF	L30C-UAU / L30C-UAE
Type	Smart sensor	Smart sensor for high powers and energies	RS232 or Analog output	UAU – USB compatible output UAE – Ethernet output
Features	Medium aperture smart sensor	High pulse energy and intermittent power	Medium aperture, built in amplifier	Medium aperture, built in amplifier
Absorber Type	Broadband	LP2	Broadband	Broadband
Spectral Range $\mu\text{m}$	0.19 - 20	0.25 – 2.2	0.19 - 20 <sup>(c)</sup>	0.19 - 20 <sup>(c)</sup>
Absorption	~88%	>94% from 0.25 to 1.1 $\mu\text{m}$	~88%	~88%
Aperture mm	Ø26	Ø26	Ø26	Ø26
Power Mode				
Maximum power <sup>(a)</sup>	free standing heat sunked			
	10W continuous, 100W for 2 min 100W	10W continuous, 100W for 2 min 100W	10W continuous, 100W for 2 min 100W	10W continuous, 100W for 2 min 100W
Minimum power	300mW	300mW	300mW	300mW
Power Noise Level	15mW	15mW	15mW	15mW
Maximum Average Power Density kW/cm <sup>2</sup>	14 at 100W 28 at 10W	42 at 100W	14 at 100W 28 at 10W	14 at 100W 28 at 10W
Response Time (0-95%), typ. (sec)	1.5	1.5	1.5	1.5
Calibration Uncertainty ±%	1.9	1.9	1.9	1.9
Power Accuracy ±% at calibrated wavelength	3	3 <sup>(d)</sup>	3	3
Linearity with Power ±%	1.5	1.5	1.5	1.5
Amplifier power supply	NA	NA	+6V to +24V	UAU - Via Host USB UAE +6V to +24V
Energy Mode				
Maximum Energy	100J	2000J	100J	100J
Minimum Energy	30mJ	30mJ	30mJ	30mJ
Energy Accuracy ±% at calibrated wavelength	5	5 <sup>(e)</sup>	5	5
Maximum Energy Density J/cm <sup>2</sup>				
<100ns	0.3	0.1	0.3	0.3
0.5ms	5	50	5	5
2ms	10	130	10	10
10ms	30	400	30	30
>300ms	NA	See below <sup>(f, g)</sup>	NA	NA
Cooling	Conduction	Conduction	Conduction	Conduction
Connections	Ophir smart plug	Ophir smart plug	6 pin Molex <sup>(b)</sup>	UAU - Mini B USB connector UAE - Ethernet for communication M12 5 pin for power
Dimensions	60x60x38mm	60x60x38mm	60x60x38mm	60x60x38mm
Compliance	CE, UKCA, China RoHS	CE, UKCA, China RoHS	RoHS, China RoHS	RoHS, China RoHS
Part number	<b>773434</b>	<b>7Z02775</b>	<b>Consult Ophir Representative</b>	<b>Consult Ophir Representative</b>

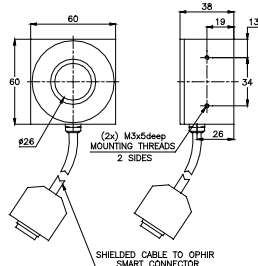
Note: (a) With analog "UAF" versions, sensor voltage output is accurate up to 2v below lowest level of supply voltage, taking into account supply voltage ripple  
 Note: (b) 6 pin Molex connections: RS232 input, Ground, +Voltage, Analog signal out, high/low voltage or switch input when used, RS232 output  
 Note: (c) Calibrated at customer selected wavelength  
 Note: (d) Above 1.1  $\mu\text{m}$  there is an additional calibration uncertainty of up to 2%  
 Note: (e) From 20J to 2000J  
 Note: (f) Long pulses (0.5 – 4s) can be used to measure power of high power lasers by measuring the energy of a short exposure. The StarBright, Juno, Juno+, Juno-RS and Centauri meters have a Pulsed Power mode where the user may specify the pulse width and get a reading directly in units of power for this short exposure energy measurement. See also page 65  
 Note: (g) Recommended exposure times and 1/e<sup>2</sup> Gaussian beam diameters for very long pulses.

Laser Power W	Recommended Exposure s	Number of shots before cooling down	Min 1/e <sup>2</sup> beam dia. mm
100	4	20	9
500	1	20	9
1000	1	10	13
2000	1	5	17
4000	0.5	5	22

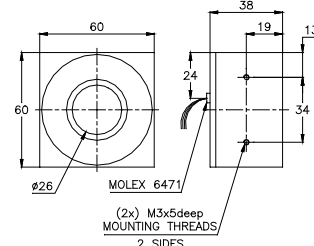
Total energy for a series of measurements should not exceed 2kJ.  
 Recommended time between shots 12s.

\* For UAE & UAU drawings please see pages 125-126

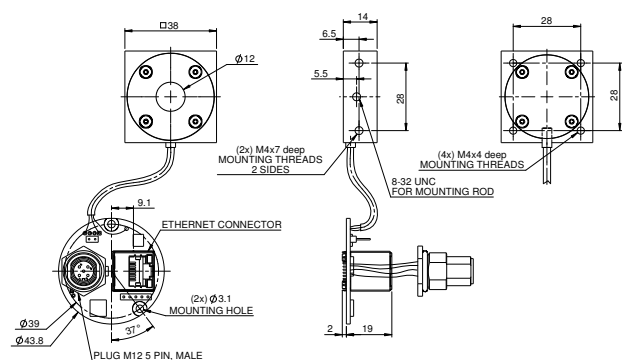
L30C-SH / L30C-LP2-26-SH



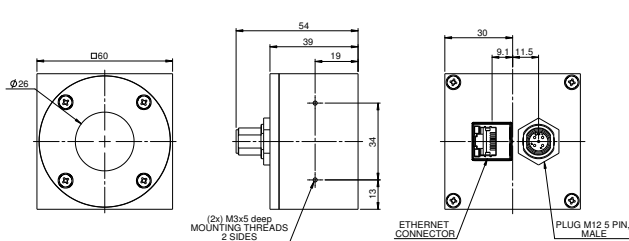
L30C-UAF



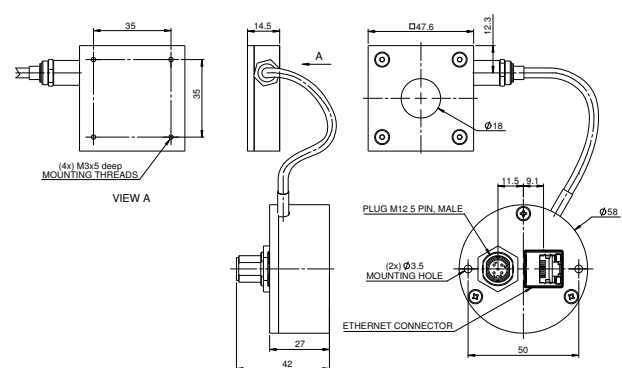
20C-UAE



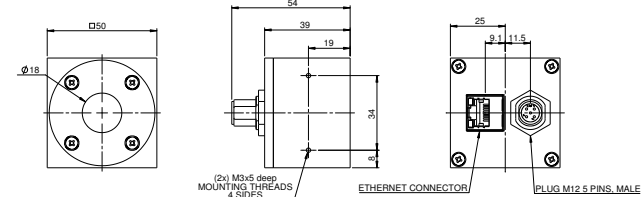
L30C-UAE



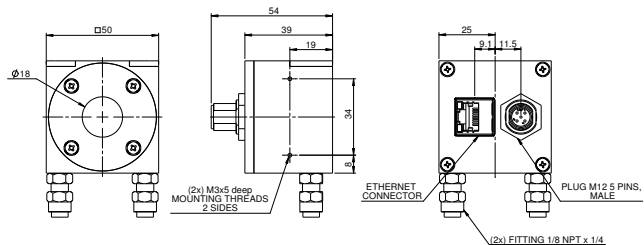
100C-UAE



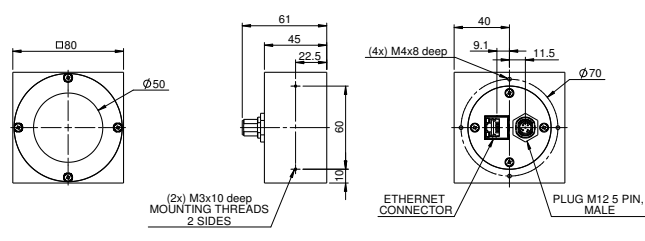
150C-UAE



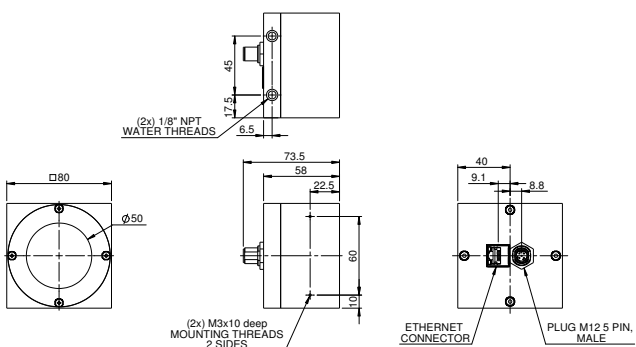
150W-UAE



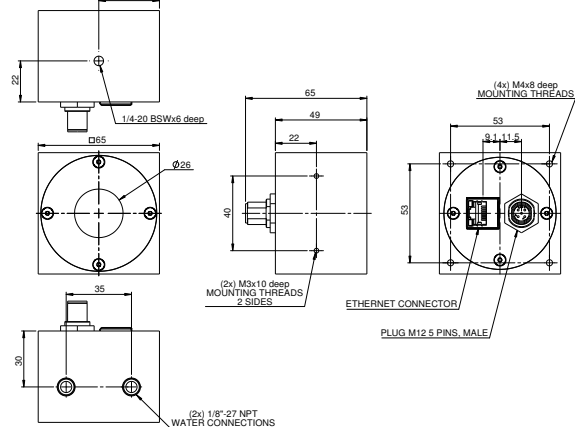
L150C-UAE



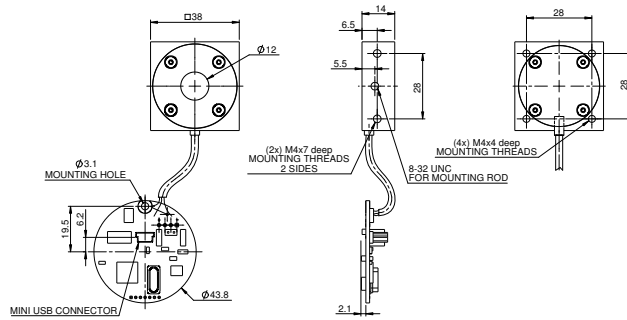
L250W-UAE / L300W-UAE



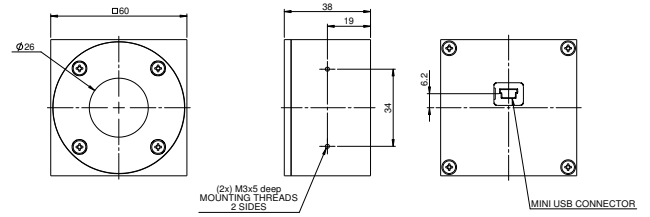
600W-UAE



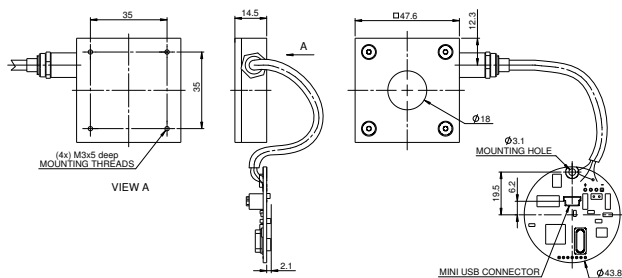
20C-UAU



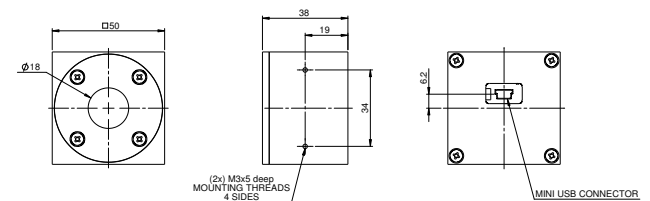
L30C-UAU



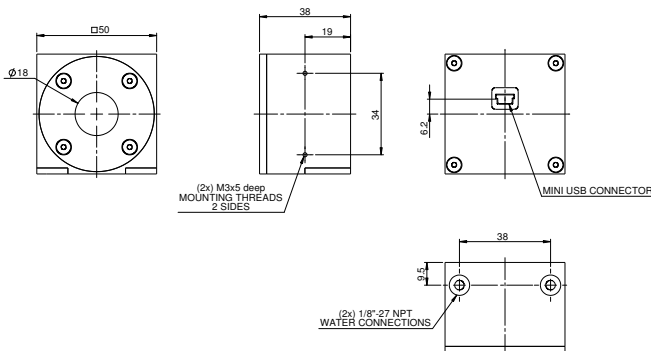
100C-UAU



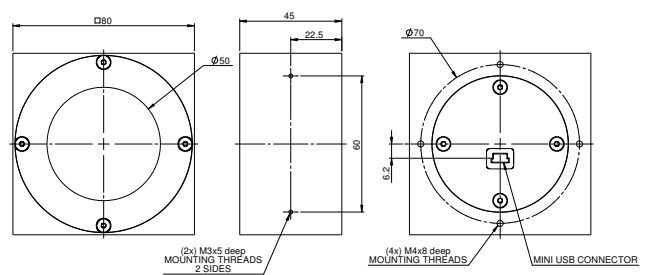
150C-UAU



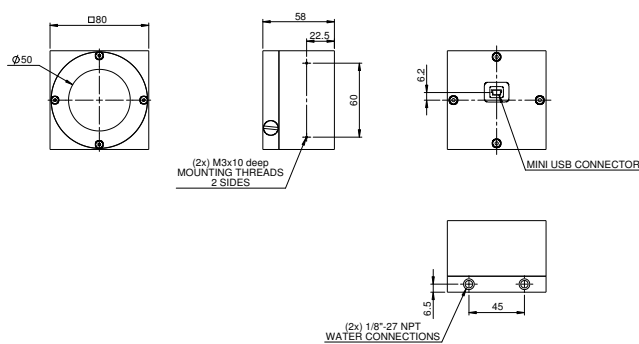
150W-UAU



L150C-UAU



L250W-UAU / L300W-UAU



600W-UAU

