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Fiber Coupled Laser SPARK-500-915

∗Rated Power > 500W @ 0.22mm fiber
∗Wavelength: 910 nm
∗Air Cooled

The SPARK-500-915 is a high power multimode continuous wave (CW) fiber coupled laser. The SPARK-500-915 laser module is one unit that contains fiber optics components, internal sensors, electrical switch, LED and an electrical connector for connecting a laser driver and control electronics. The module has optical connector type multimode FC-APC for connection of external light sources and sensors.
The laser is assembled on a heat sink integrated with the laser enclosure. The heat sink is forced air cooled using build in fans. The laser is terminated with high power armored output fiber optic cable. Output connector of the cable is passively conductive cooled; it includes an end-cap and a thermal interlock sensor.

FEATURES	APPLICATIONS
Good Power Stability: < ±2.0 % Line Width: < 5 nm Armored output fiber cable CW Operation Air Cooling	3D Printer Soldering, Welding Micro Processing, Marking Printing （CtP） Illumination for Imaging

1.1 Optical Specifications

Parameter	Units	Value
Wavelength	nm	915
Wavelength stability	nm	+/- 15
Output power, max	W	500
Mode of operation	-	CW
Operation time at max power, max	hours	0.5
Spectral line width	nm	5
Power stability after warm up, over 1hr	[%]	<2
Internal Fiber type	um	220/240
Internal Fiber NA	NA	0.24
Delivery cable Fiber type	um	220/240
Delivery cable Fiber NA	NA	0.28
Delivery cable length	m	5
Delivery cable bend radius, min	m	0.2
Output divergence, half angle, 99% of power	-	0.24
Fiber attenuation	dB/km	<1.5

1.2 I/O and Electrical Specifications

Connector J2: Main connector used for power and interlocks (D-type 15 pin)

Parameter	Units	Specification
Operating Current (max)	A	8.5
Operating voltage (max)	V	134
Power consumption (max)	W	1140

Connector J3: Optional use for temperature measurements (D-type 9 pin)

Parameter	Units	Specification
Thermistor 1 (Combiner) Pin# 5,9	K ohm	10
Thermistor 2 (Heatsink) Pin# 1,6	K ohm	10

Connector OP1: Optical Port (FC/APC), fiber type: Silica-Silica step index 105/125 NA0.22

Parameter	Units	Specification
Insertion loss (Connector OP1 to Output Cable)	dB	0.24

Output connector of armored optical cable: Fused silica AR coated endcap .

Parameter	Units	Specification
Endcap diameter	mm	5

1.3 Environmental Specifications

Parameter	Units	Specification
Operating Temperature Range	°C	10-30 for full power, 30-45 for reduced current = 5A, 300W
Storage Temperature Range	°C	0-45

1.4 Mechanical drawing

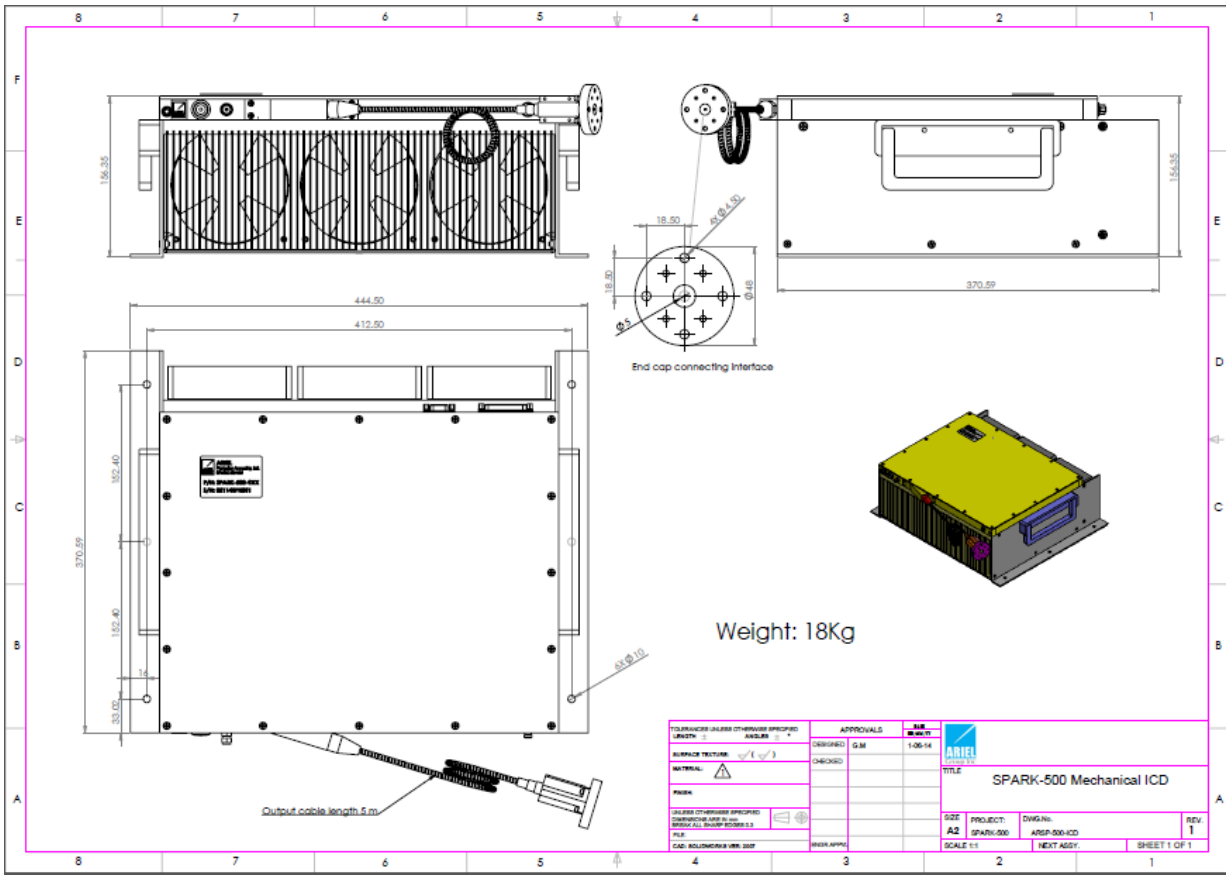

Figure 2: Mechanical drawing of the laser module.