

CORELIGHT[®] Series

High-Power Fiber Laser Systems



CORELIGHT Series high-power fiber laser systems are based on Lumentum next-generation high-reliability engines. The laser systems offer straightforward integration with new and existing machine tools and are optimized for performance, space savings and cost efficiency. Laser control and monitoring are accomplished through analog and Ethernet communication ports. Multiple, user-accessible, real-time system logs assure detailed operational history is available for review at any time.

CORELIGHT Series high-power fiber laser systems are based on Lumentum fiber laser engines with proven use in demanding industrial environments worldwide.

All CORELIGHT high-power fiber laser products incorporate Lumentum-patented ST* Series high-brightness diode pump modules resulting in a compact design with industry-leading brightness and electrical-to-optical efficiency.

* 200 W fiber-coupled diode pump laser module

Key Features

- Compact and powerful design
- Industry-leading brightness
- Strong back-reflection immunity – fast processing of reflective materials, such as copper, aluminum, and brass

Applications

- Macromaterials processing including:
 - 2D, 3D metal cutting
 - Welding
 - Additive manufacturing

Preliminary Specifications

Parameter	CORELIGHT SERIES FIBER LASER SYSTEMS		
Output power (min)	3000, 4000, 6000, 8000 W		
Center wavelength	1080 nm		
Fiber core diameter	50 or 100 μ m		
BPP (typical)	Output fiber core / beam shape	3000, 4000 W	6000, 8000 W
	50 μ m, Pseudo-Gaussian	1.5 mm mrad	-
	100 μ m, Top hat	3.5 mm mrad	3.0 mm mrad
Fiber length	Up to 20 m		
Output connector	LLK-Q Compatible		
Communication	Analog/Ethernet		
Modulation frequency	Up to 10 kHz		
Modulation depth	98% minimum		
Power monitor accuracy	10%		
Aiming beam (650 nm)	Class 2M		
Dimensions (H x W x L)	3000, 4000 W: 760x870x1200 mm 6000, 8000 W: 1375x920x1200 mm		

Electrical

AC Voltage	380 to 480 VAC
AC Wiring configuration	Wye (5 wire)
AC Power consumption (typical)	11/13/21/27 kW (3/4/6/8 kW)

Water - Laser

Connection type	$\frac{3}{4}$ Female BSPT (includes 25 mm hose barb fittings)
Flow rate	45 LPM (3/4 kW); 100 LPM (6/8 kW)
Cooling water requirements	Distilled or deionized water; < 15 μ S/cm conductivity
Water temperature	25 \pm 1 $^{\circ}$ C

Water - LLK-Q Optical Connector Cooling Monitor (optional)

Connection type	Hose barb for 4 mm ID, 6 mm OD tubing
Flow rate	1.5 LPM to 2.5 LPM
Cooling water requirements	Distilled or deionized water; 0.1 - 100 μ S/cm conductivity
Water temperature	15 to 35 $^{\circ}$ C

Environmental

Operating air temp (non-condensing)	5 to 40 $^{\circ}$ C
Operating environment humidity	\leq 90% RH
Non-operating air temp (non- condensing)	-10 to 65 $^{\circ}$ C

Laser Safety

Operating this product in a manner inconsistent with intended usage and specifications may result in hazardous radiation exposure.



Regulatory Compliance

CE marking	As a component of a larger system
Safety certification level	Per EN ISO 13849-1 / Performance Level C
Safety	TUV Rheinland Certified , CB Certified
	Machinery Directive 2006/42/EC IEC EN 60825-1:2014 (Laser Class 4) IEC/EN 61010-1: 2010 EN ISO 12100:2010 EN ISO 13849-1:2014
Americas	As a component of a larger system
EMC	EMC Directive 2014/30/EU EN61000-6-2 , EN61000-6-4 FCC part 15 Subpart B ICES-003 Issue 6
NRTL Safety	cTUVus certified UL/CSA 61010-1:2012 FDA/CDRH Registered (LN#56) (Laser Class 4)

Ordering Information

For more information on this or other products and their availability, please contact your local Lumentum account manager or Lumentum Customer Service at customer.service@lumentum.com.

Model number	Operating Power (kW)	Core size (µm)	Feed fiber length (m)	Output connector	Part number
YTK-3000	3	50	20	LLK-Q	22151089
	3	100	20	LLK-Q	22151092
YTK-4000	4	50	20	LLK-Q	22150377
	4	100	20	LLK-Q	22150378
YTK-6000	6	100	20	LLK-Q	22164016
YTK-8000	8	100	20	LLK-Q	22164018



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