

# CRFL SERIES

CW ERBIUM FIBER LASER , TERAHERTZ LINEWIDTH



## KEY FEATURES

- High output power up to 20 W
- Standard 1455 or 1480 nm operating wavelengths
- High efficiency frequency conversion
- Excellent power stability
- Non polarized output light
- Benchtop or module available
- Maintenance free

## Description

**CRFL series Raman fiber lasers provide high output power up to 20 W at 1455 and 1480 nm. The diffraction limited beam is unpolarized.**

Principle of operation involves utilization of a high power Ytterbium fiber laser source to pump a cascaded Raman resonator. High conversion efficiency is achieved from fundamental pump laser to final Raman Stokes.

These Raman lasers are well suited for distributed Raman amplification, remote pumping of EDFAs or for Telcordia fiber optic component testing.

The CRFL are available in benchtop format for laboratory environment or in module format for easy integration into a system.

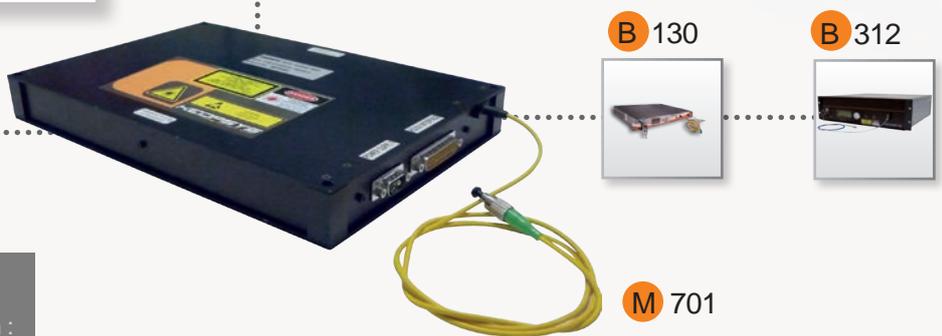
## APPLICATIONS



- Distributed Raman amplification
- Remote EDFA pumping
- Pump splitting architecture
- Fiber optic component testing

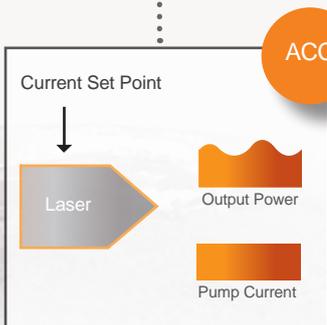
Crédit photo plateforme B130 : Wyecs Prod

## 3 Platforms

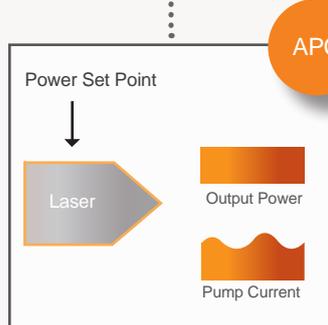


## Modes of operation

The devices offer several modes of operation :



**ACC** (Automatic Current Control) mode is standard for all devices. The laser is controlled from diodes current set point.



**APC** (Automatic Power Control) mode allows to control the laser at a fixed output power set point. The device maintains a constant optical output power monitored with a photodiode. The current is adjusted automatically.

## CRFL SERIES

### S-BAND RAMAN FIBER LASERS

#### Optical Specifications

@ 25 °C

	CRFL
Mode of operation	CW
Output power	From 2 to 20 W
Standard operating wavelength *	1455 - 1480 nm
Linewidth	< 2 nm or < 3 nm
In band power	> 90 % (over +/- 5 nm from peak operating wavelength)
Side mode suppression (1000-1400 nm)	> 15 dB or >14 dB depending of the output power
Polarization	Random
Beam quality, M <sup>2</sup>	< 1.1
Output monitor and APC (option)	Internal photodiode and automatic power control mode
Output power tunability	25 to 100 % or 10 to 100 % depending of the output power
Output fiber type	SMF28
Output termination	FC/APC, E2PS or Collimator

**The CRFL series lasers are available as turn key system or as OEM module.**

### RELIABILITY

The Keopsys range of fiber lasers are manufactured with tested components and are submitted to several inspections during the manufacturing process under a rigorous quality management certified in accordance with the ISO 9001:2008 standard. Our all-in-fiber systems offer maintenance free operation. Countless units are continuously running in demanding environments with no failure.

### GUARANTEE

Our fiber systems are under 1 full year parts and labor guarantee. We offer a warranty extension of 1 or 2 years. Please contact us.

## CRFL SERIES

### S-BAND RAMAN FIBER LASERS

#### Optical Specifications

@ 25 °C

	CRFL			
	CRFL02	CRFL05	CRFL10	CRFL20
Mode of operation	CW			
Output power	2 W	5 W	10 W	20 W
Standard operating wavelength*	1455 - 1480 nm			
Linewidth	< 2 nm		< 3 nm	
In band power	> 90 % (over +/- 5 nm from peak operating wavelength)			
Side mode suppression (1000-1400 nm)	> 15 dB			>14 dB
Relative intensity noise	< -105 dB/Hz			
Power stability (rms) over 1 hour	<1 %		<2 %	
Polarization	Random			
Beam quality, M <sup>2</sup>	< 1.1			
Output monitor and APC (optional)	Internal photodiode and automatic power control mode			
Output power tunability	25 to 100 %	10 to 100 %		
Output fiber type	SMF28			
Output termination	FC/APC, E2PS or Collimator			
Power consumption**	<30 W	<80 W	<150 W	<300 W
Associated platform	B130, M701		B130	B312

#### Platform Specifications

	Platform type		
	B130	B312	M701
Voltage	84 to 264 VAC (47 to 63 Hz)		24 VDC
Control Interface	Front panel, USB, RS232, RJ45	Front panel and RS232	RS232
Optical interface	3 mm PVC, 1 m (rugged anti pool pigtail fixing)	3 mm PVC, 1 m	
Warm-up time	< 5 min	< 15 min	< 5 min
Dimensions	443x315x44 mmv	448x446x133 mm, 3U	300x200x35 mm
Weight	< 8 kg	< 15 kg	<1.5 kg
Operating case temperature	+15 °C to +35 °C		-20 °C to +65 °C
Storage temperature	-20 °C to +55 °C		-40 °C to +85 °C

\* Other wavelengths available on special request

\*\* Power consumption for modules

#### Ordering information

C	R	F	L	-		-		-		-		-		
<b>Output power</b>				<b>Center Wavelength</b>				<b>Platform</b>				<b>Output termination</b>		
0	1	1	W	1	4	5	5	1455 nm	B	1	3	0	F	A
0	5	5	W	1	4	8	0	1480 nm	B	3	1	2	C	1
1	0	10	W						M	7	0	1		Collimator 1
2	0	20	W	<b>Output monitor &amp; APC</b>										
				1	Yes									
				0	No									