51nanoFI-S-850-15-TH11-P-5-2-28-0-150

Fiber-coupled low coherence laser source with integrated Faraday isolator and polarization-maintaining fiber cable

FEATURES

The Laser Diode Beam Source of type 51nanoFI-S-850-15-TH11-P-5-2-28-0-150 has a reduced power noise, a reduced coherence length and a low speckle contrast.

- Reduced power noise: typ. < 0.1 % of P_0 (RMS, Bandwidth < 1 MHz)
- Reduced coherence length: coherence length ≈ 300 µm
- Reduced speckle contrast
- Wavelength: 850nm
- Laser output power: 15 mW
- Integrated Faraday isolator > 30 dB
- Polarization-maintaining fiber cable
- FC APC connector (8°-polish)
- Modulation analog and TTL
- With interlock and key switch (conform to EN 60825-1)

Alternative: Laser Diode Beam Source 51nanoFi-N (OEM version w/o key switch and w/o interlock)

- Discontinued
  Has been discontinued. Similar product:
  51nanoFI-S-850-15-G17-P-5-2-28-0-150

COMPARE

- With integrated Faraday isolator

This product has been discontinued. Requests will be managed according to the residual stock. Contact us to discuss any specific need. Similar product: 51nanoFI-S-850-15-G17-P-5-2-28-0-150

DESCRIPTION

The fiber-coupled Laser Diode Beam Source of type 51nanoFI-S-850-15-TH11-P-5-2-28-0-150 has a reduced power noise (typ. < 0.1 % of P_0 (RMS, Bandwidth < 1 MHz)), reduced coherence length (≈ 300 µm) and a lowered speckle contrast.

Electrical features
The output power is adjustable using a potentiometer or using the two modulation inputs for analog and TTL.

Faraday isolator
The source has an integrated Faraday isolator in order to protect the laser from back reflections.

Fiber cable
The source is fiber-coupled to a polarization-maintaining fiber cable (standard, polarization extinction ratio ≥ 23 dB). As a result the beam profile is rotationally symmetric with Gaussian intensity distribution. The fiber cable is equipped with an FC APC type connector (8°-polish). The fiber cable has a strain-relief and a protective sleeving (Ø 3 mm). Standard cable length is 150 cm.

Options:

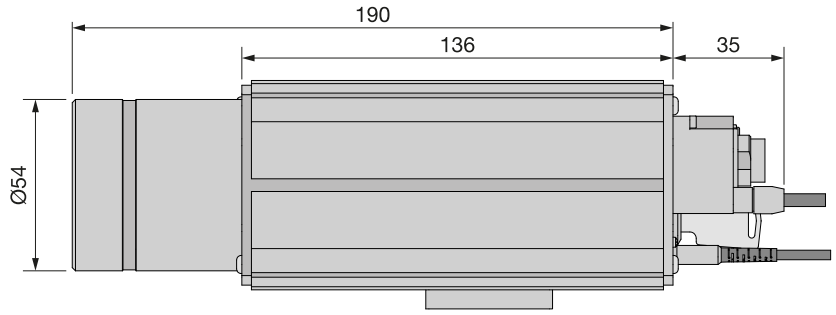
- Single-mode fiber
- Core-centered (single-mode only)
- Other connector types including FC PC, DIN or AVIO, or E2000
- Other fiber cable lengths
- Incorporated vacuum feed-through

Laser safety
The laser safety is conform to IEC 825 / EN 60825-1.

- Interlock chain for the remote deactivation of the laser
- Laser power-up is only possible using the key switch
- LED status indicator for “Laser ON”
- For a quick start the laser is shipped with a interlock connector type BC0106F-iLCK

An OEM version is available as type 51nanoFi-N without key switch or interlock which is not conform to EN 60825-1.

A version without Faraday isolator is available here.



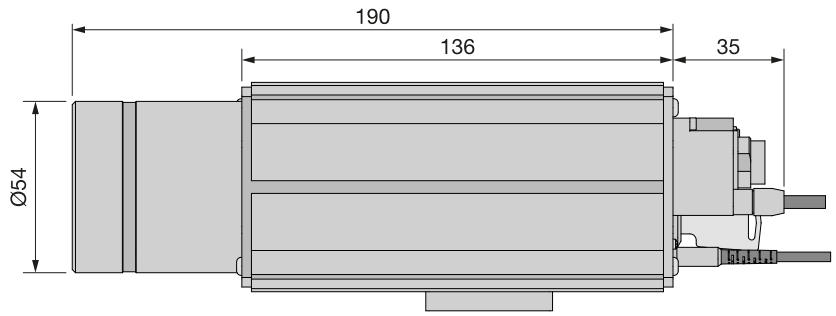
TECHNICAL DATA

51nanoFI-S-850-15-TH11-P-5-2-28-0-150

Order Code	51nanoFI-S-850-15-TH11-P-5-2-28-0-150
Series	51nanoFI-S (PM)
Laser class	3B
Center Wavelength	850 ± 10 nm
Bandwidth	0.7 - 4 nm
Output power	typ. 15 mW
Power adjustment	< 1 - 100 %
Power noise	typ. < 0.1 % of P_0 (RMS, BW < 1 MHz)
Coherence length	≈ 300 µm
Isolation	> 30 dB
Fiber cable	polarization-maintaining
Fiber type	PMC-780
Nominal fiber NA	0.12
Effective fiber NA_{e^2}	0.076 ± 10 % ($1/e^2$)
Mode field diameter MFD	7.1 µm ± 10 % ($1/e^2$)

PER		≥ 23 dB
Fiber cable length		1.5 ± 0.05 m (standard)
Fiber cable type		Ø 3 mm with Kevlar strain-relief
Fiber connector type		FC APC (standard)
Power stability		max. 12 % power variation between 15°C and 35°C
Electronics type		H
Electr. cable length		1.5 ± 0.1 m (standard)
Connector type		3 pin (male, Lumberg SV30)
Supply voltage		5.0 ± 0.2 V
Max. current consumption*		260 mA
Modulation input connector		6 pin (male, Lumberg SV60)
Modulation inputs	Analog	TTL
Max. input voltage	5 V	5 V
Voltage for P_{min} / P_O	0 V / 2.5 V	< 0.8 V / > 2.4 V
Input impedance	22 kOhm	22 kOhm
Max. modulation frequency	100 kHz	100 kHz
Time delay ON/OFF*	2/0.3 µs	1.5/0.1 µs
Rise / fall time*	1.0/1.0 µs	1.0/1.0 µs
*** Typical value. Depends on laser diode.**		
Operating temperature		15 - 35°C ± 0.5°C
Warm-up time		approx. 10 min
Air humidity		max. 90 % non-condensing
Casing Type		S1
Weight		g
Dimensions (w/o base)		66 x 66 x 225 mm
Protection Class		IP30

Dimensions (for a complete dimensional drawing please refer to the downloads section)



TECHNOTES

- Fiber-coupled low noise beam source
  Comparison of a low noise laser source to a conventional laser source
- 51nano: Electronics Type H
  Electronic features for electronics type H

DOWNLOADS

090410090100.pdf (Dimensional drawing)

Conformity_51nano_2023_E_web.PDF (CE certificate)

ACCESSORIES

PS051003E	Power Supply 5 V
BC0106F-ILCK	Interlock connector
FIBER COLLIMATORS SINGLE-MODE/PM	Fiber Collimators for collimating light exiting a single-mode or polarization-maintaining fiber cable

RELATED PRODUCTS

51NANO-S (POLARIZATION-MAINTAINING)	Fiber-coupled low coherence laser source with polarization-maintaining fiber cable
51NANOFI-N WITH FARADAY ISOLATOR (PM/OEM)	Fiber-coupled low coherence laser source with polarization-maintaining fiber cable (OEM version)
51NANOFI-S WITH FARADAY ISOLATOR (SM)	Fiber-coupled low coherence laser source with single-mode fiber cable

This is a printout of the page https://sukhamburg.com/products/details/51nanoFI-S-850-15-TH11-P-5-2-28-0-150 from 5/4/2024

CONTACT

For more information please contact:
Schäfter + Kirchhoff GmbH
Kieler Str. 212
22525 Hamburg
Germany
Tel: +49 40 85 39 97-0
Fax: +49 40 85 39 97-79

info@sukhamburg.de
www.sukhamburg.com

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