

51nanoFI-N with Faraday isolator (SM/OEM)

Fiber-coupled low coherence laser source with single-mode fiber cable (OEM version)



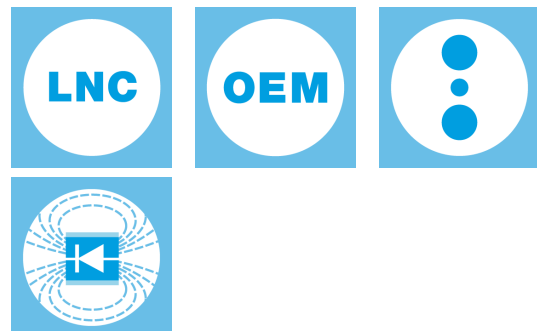
FEATURES

Laser Diode Beam Sources of type 51nanoFI-N have reduced power noise, reduced coherence length and lowered speckle contrast.

- OEM version without key switch nor interlock and not conforming to EN 60825-1
- Integrated Faraday isolator for feedback protection (>30 dB)
- Reduced power noise: typ. < 0.15 % of P_o (RMS, Bandwidth < 1 MHz)
- Reduced coherence length: Coherence length $\approx 300 \mu\text{m}$
- Reduced speckle contrast
- Various wavelengths from 405 nm to 1550 nm
- Laser output power up to 27 mW
- Single-mode fiber cable
- FC APC connector (8°-polish), optional DIN AVIO or E-2000, end caps for wavelengths < 635 nm
- Beam profile is rotationally symmetric with Gaussian intensity distribution

Alternative: Laser Diode Beam Source [51nanoFI-S](#) (with key switch and interlock)

- Low noise, low coherence laser module (typ. < 0.15 % of P_o (RMS, Bandwidth < 1 MHz))
- OEM Version
- With integrated Faraday isolator



DESCRIPTION

The fiber-coupled Laser Diode Beam Sources of type 51nanoFI-N (OEM version) have reduced power noise (typ. < 0.15 % of P_0 (RMS, Bandwidth < 1 MHz)), reduced coherence length ($\approx 300 \mu\text{m}$) and a lowered speckle contrast. Additionally sources of type 51nanoFI have an integrated Faraday isolator to protect the laser source from back-reflection.

Electrical features

The output power is adjustable using a potentiometer (with protective cap) or using the two modulation inputs for analog and TTL. The electrical cable is 1.5 m long. There are two possible supply voltages 5 V or 12 V. Other electrical cables and connectors on request.

More details on electronics type: [HP](#), [H](#).

Fiber cable

The source is fiber-coupled to a single-mode fiber cable. As a result the beam profile is rotationally symmetric with Gaussian intensity distribution. The fiber cable is equipped with an FC APC connector (8°-polish). Fiber connectors with end caps are used for wavelengths < 635 nm. The fiber cables have strain-relief and protective sleeving ($\varnothing 3 \text{ mm}$). Standard cable length is 150 cm.

Fiber Options:

- Other connector types including DIN, AVIO or E2000
- Other fiber lengths
- Incorporated vacuum feed-through

Faraday isolator

Faraday isolators are used to protect the laser sources from back-reflection, which causes mode hopping, laser noise, frequency instability and a shorter laser lifetime. The Faraday isolator has a high isolation > 30 dB.

Laser safety

This OEM version has no key switch or interlock and is not conform to EN 60825-1.

It can be operated conform to EN 60825-1 by means of a switchbox.

As an alternative, a version with key switch and with interlock (conform to EN 60825-1) is available

as type [51nano-S](#).

TECHNICAL DATA

51nanoFI-N with Faraday isolator (SM/OEM)

Series	51nanoFI-N
Wavelength	405 nm - 1550 nm
Power noise	typ. < 0.15 % of P_0 (RMS, BW < 1 MHz)
Coherence length	$\approx 300 \mu\text{m}$
Fiber cable	single-mode

Fiber cable length	1.5 m (standard)
Fiber connector type	FC APC (standard)
Supply voltage	5 V or 12 V
Electr. cable length	1.5 m (standard)
Connector type (5V)	Lumberg SV30 IEC 61076-2-106
Connector type (12V)	Lumberg SV40 IEC 61076-2-106
Cable type	shielded 4 x 0.14 mm ²
Modulation	analog and TTL
Operating temperature	15 - 35°C ± 0.5°C
Dimensions	
Weight	

ORDER OPTIONS

Order Code	Wavelength	Typ. Output Power P_o	Supply Voltage	Fiber Type	Connector	End cap	Electronics Type	Laser Class	Casing Type
51nanoFI-N-405-1-Y07-P-12-4-18-0-150	405 nm	0.9 mW	12 V	Single-mode	FC APC	x	HP	2	N1
51nanoFI-N-405-13-M29-P-12-4-18-0-150	405 nm	13 mW	12 V	Single-mode	FC APC	x	HP	3B	N1
51nanoFI-N-445-15-G02-P-12-4-18-0-150	445 nm	15 mW	12 V	Single-mode	FC APC	x	HP	3B	N1
51nanoFI-N-520-6-O11-P-12-4-18-0-150	520 nm	6 mW	12 V	Single-mode	FC APC	x	HP	3B	N1
51nanoFI-N-635-1-H10-P-5-2-18-0-150	635 nm	0.9 mW	5 V	Single-mode	FC APC		H	2	N1
51nanoFI-N-640-15-H21-P-5-2-18-0-150	640 nm	15 mW	5 V	Single-mode	FC APC		H	3B	N1
51nanoFI-N-660-1-M01-P-5-2-18-0-150	660 nm	0.9 mW	5 V	Single-mode	FC APC		H	2	N1
51nanoFI-N-660-25-H26-P-5-2-18-0-150	660 nm	25 mW	5 V	Single-mode	FC APC		H	3B	N1
51nanoFI-N-785-10-Q06-P-5-2-18-0-150	785 nm	10 mW	5 V	Single-mode	FC APC		H	N2	N2
51nanoFI-N-808-16-G15-P-5-2-18-0-150	808 nm	16 mW	5 V	Single-mode	FC APC		H	3B	N1
51nanoFI-N-830-10-H19-P-5-2-18-0-150	830 nm	10 mW	5 V	Single-mode	FC APC		H	3B	N2
51nanoFI-N-850-15-G17-P-5-2-18-0-150	850 nm	15 mW	5 V	Single-mode	FC APC		H	3B	N1
51nanoFI-N-980-2-TH4-P-5-2-18-0-150	980 nm	2 mW	5 V	Single-mode	FC APC		H	3R	N2
51nanoFI-N-1064-8-Q05-P-5-2-18-0-150	1064 nm	8 mW	5 V	Single-mode	FC APC		H	3B	N2
51nanoFI-N-1310-2-M14-P-5-2-18-0-150	1310 nm	2 mW	5 V	Single-mode	FC APC		H	1	N1
51nanoFI-N-1550-4-Q04-P-5-2-18-0-150	1550 nm	4 mW	5 V	Single-mode	FC APC		H	1	N1

info@sukhamburg.de | www.sukhamburg.com

Other types e.g. with single-mode fiber cable are available.

TECHNOTES

- [Fiber-coupled low noise beam source](#)
[Comparison of a low noise laser source to a conventional laser source](#)
- [51nano: Electronics Type HP](#)
[Electronic features for electronics type HP](#)
- [51nano: Electronics Type H](#)
[Electronic features for electronics type H](#)
- [Article - Fiber coupled low coherence laser sources](#)
[Series 51nano](#)

DOWNLOADS



[Article_51Nano.pdf \(Technote\)](#)

This downloads section only includes general downloads for the complete series.

Please access the individual product pages (using the product configurator, the product list, order options or the search button if you have a complete order code). Here you will find specific downloads including technical drawings or stepfiles.

ACCESSORIES

PS120516E Power Supply 12 V

PS051003E Power Supply 5 V

RELATED PRODUCTS

51NANOFI-S WITH FARADAY ISOLATOR (PM) Fiber-coupled low coherence laser source with polarization-maintaining fiber cable

51NANO-N (POLARIZATION-MAINTAINING, OEM) Fiber-coupled low coherence laser source with polarization-maintaining fiber cable (OEM version)

FIBER COLLIMATOR SERIES 60FC for collimating radiation exiting an optical fiber or as an incoupler

FIBER COLLIMATOR SERIES 60FC-T for collimating large beam diameters and with additional TILT adjustment

This is a printout of the page <https://sukhamburg.com/products/fiberoptics/51nano/OEMFi/51nanofi/sm.html> from 5/8/2024

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

LEGAL NOTICE

Copyright 2020 Schäfter+Kirchhoff GmbH. All rights reserved.

Text, image, graphic, sound, video and animation files and their arrangement on Schäfter+Kirchhoff GmbH webpages are protected by copyright and other protective laws. The content may not be copied for commercial use or reproduced, modified or used on other websites. [\[more\]](#)