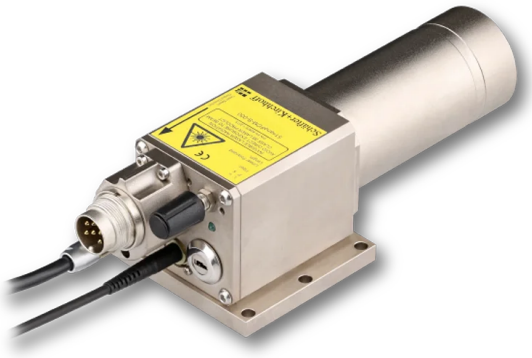
Fiber-coupled Lasers series 51nano-S (PM)

Low coherence laser source with polarization-maintaining fiber cable



FEATURES

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

- Reduced power noise: typ. < 0.15 % of P_0 (RMS, Bandwidth < 1 MHz)
- Reduced coherence length: Coherence length ≈ 300 µm
- Reduced speckle contrast
- Various wavelengths from 375 nm to 1550 nm
- Laser output power up to 30 mW
- Polarization-maintaining fiber cable (Polarization Extinction Ratio PER ≥ 23 dB (for λ < 600 nm ≥ 21 dB))
- FC APC connector (8°-polish), optional DIN AVIO or E-2000, end caps for wavelengths < 635 nm
- Modulation analog and TTL
- With interlock and key switch (conform to EN 60825-1)
- Beam profile is rotationally symmetric with Gaussian intensity distribution

Alternative: Laser Diode Beam Source 51nano-N (OEM version without key switch or interlock) or with single-mode fiber cable

---

- Low noise, low coherence laser module (typ. < 0.15 % of P_0 (RMS, Bandwidth < 1 MHz))

DESCRIPTION

The fiber-coupled Laser Diode Beam Sources of type 51nano-S have reduced power noise (typ. < 0.15 % 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. 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 polarization-maintaining fiber cable (standard, polarization extinction ratio ≥ 23 dB). As a result the beam profile is rotationally symmetric with Gaussian intensity distribution and a linear state of polarization. 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 (Ø 3 mm). Standard cable length is 150 cm.

Fiber Options:

- Other connector types including DIN, AVIO or E2000
- Other fiber 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 lasers are shipped with a interlock connector type BC0106F-iLCK

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

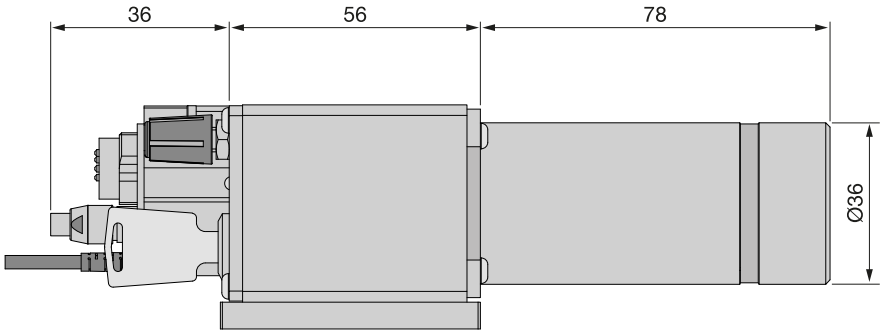
TECHNICAL DATA

Fiber-coupled Lasers series 51nano-S (PM)

Series	51nano-S
Wavelength	375 nm - 1550 nm
Power noise	typ. < 0.15 % of P_0 (RMS, BW < 1 MHz)
Coherence length	≈ 300 µm
Fiber cable	polarization-maintaining
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	3 x AWG 26 C UL
Modulation	analog and TTL
Operating temperature	15 - 35°C ± 0.5°C
Dimensions	50 x 58 x 166 mm
Weight	530 g

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



ORDER OPTIONS

Order Code	Wavelength	Typ.Output Power P_o	Supply Voltage	Fiber Type	Connector	End cap	Electronics Type	Laser Class
51nano-S-375-10-X23-P-12-4-28-0-150	375 nm	10 mW	12 V	Polarization-maintaining	FC APC	x	HP	3B
51nano-S-405-1-Y07-P-12-4-28-0-150	405 nm	0.9 mW	12 V	Polarization-maintaining	FC APC	x	HP	2
51nano-S-405-14-M29-P-12-4-28-0-150	405 nm	14 mW	12 V	Polarization-maintaining	FC APC	x	HP	3B
51nano-S-445-17-G02-P-12-4-28-0-150	445 nm	17 mW	12 V	Polarization-maintaining	FC APC	x	HP	3B
51nano-S-520-7-O11-P-12-4-28-0-150	520 nm	7 mW	12 V	Polarization-maintaining	FC APC	x	HP	3B
51nano-S-635-1-H10-P-5-2-28-0-150	635 nm	0.9 mW	5 V	Polarization-maintaining	FC APC		H	2
51nano-S-640-17-H21-P-5-2-28-0-150	640 nm	17 mW	5 V	Polarization-maintaining	FC APC		H	3B
51nano-S-660-1-M01-P-5-2-28-0-150	660 nm	0.9 mW	5 V	Polarization-maintaining	FC APC		H	2
51nano-S-660-28-H26-P-5-2-28-0-150	660 nm	28 mW	5 V	Polarization-maintaining	FC APC		H	3B
51nano-S-785-12-Q06-P-5-2-28-0-150	785 nm	12 mW	5 V	Polarization-maintaining	FC APC		H	3B
51nano-S-808-19-G15-P-5-2-28-0-150	808 nm	19 mW	5 V	Polarization-maintaining	FC APC		H	3B
51nano-S-830-11-H19-P-5-2-28-0-150	830 nm	11 mW	5 V	Polarization-maintaining	FC APC		H	3B
51nano-S-850-18-G17-P-5-2-28-0-150	850 nm	18 mW	5 V	Polarization-maintaining	FC APC		H	3B
51nano-S-905-18-Q13-P-5-2-28-0-150	905 nm	18 mW	5 V	Polarization-maintaining	FC APC		H	3B
51nano-S-940-15-C07-P-5-2-28-0-150	940 nm	15 mW	5 V	Polarization-maintaining	FC APC		H	3B
51nano-S-980-2.3-TH4-P-5-2-28-0-150	980 nm	2.3 mW	5 V	Polarization-maintaining	FC APC		H	3R
51nano-S-1064-10-Q05-P-5-2-28-0-150	1064 nm	10 mW	5 V	Polarization-maintaining	FC APC		H	3B
51nano-S-1310-2.5-M14-P-5-2-28-0-150	1310 nm	2.5 mW	5 V	Polarization-maintaining	FC APC		H	1
51nano-S-1550-4.5-Q04-P-5-2-28-0-150	1550 nm	4.5 mW	5 V	Polarization-maintaining	FC APC		H	1

Other types e.g. with different wavelengths are available.

Click here for sources with single-mode fiber cables.

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

000829001100.pdf (Dimensional drawing)

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
BC0106F-ILCK	Interlock connector

RELATED PRODUCTS

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

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/51nano/pm.html from 4/26/2024

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