51nano-N-830-11-H19-P-5-2-28-0-150

Fiber-coupled low coherence laser source with polarization-maintaining fiber cable (OEM version)

FEATURES

The Laser Diode Beam Source of type 51nano-N-830-11-H19-P-5-2-28-0-150 has a reduced power noise, a reduced coherence length and a low speckle contrast.

- Reduced power noise: typ. < 0.15 % of P_0 (RMS, Bandwidth < 1 MHz)
- Reduced coherence length: coherence length ≈ 300 µm
- Reduced speckle contrast
- Wavelength: 830 nm
- Laser output power: 11 mW
- Polarization-maintaining fiber cable
- FC APC connector (8°-polish)
- Modulation analog and TTL
- OEM version w/o interlock and w/o key switch

Alternative: Laser Diode Beam Source 51nano-S (with key switch and interlock) or with single-mode fiber cable

DESCRIPTION

The fiber-coupled Laser Diode Beam Source of type 51nano-N-830-11-H19-P-5-2-28-0-150 has a 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

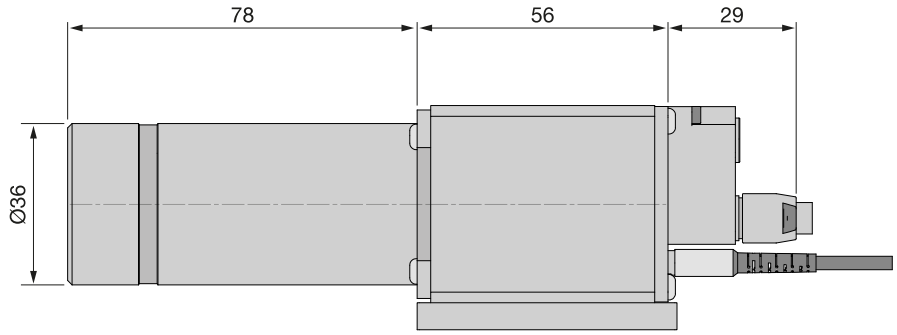
The output power is adjustable using a potentiometer or using the two modulation inputs for analog and TTL.

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)
- Multiple fiber output cables (51nanoC, single-mode only)
- Other connector types including FC PC, DIN or AVIO, or E2000
- Other fiber cable lengths
- Incorporated vacuum feed-through

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 using a switchbox.
As an alternative, a version with key switch and with interlock (conform to EN 60825-1) is available
as type 51nano-S.



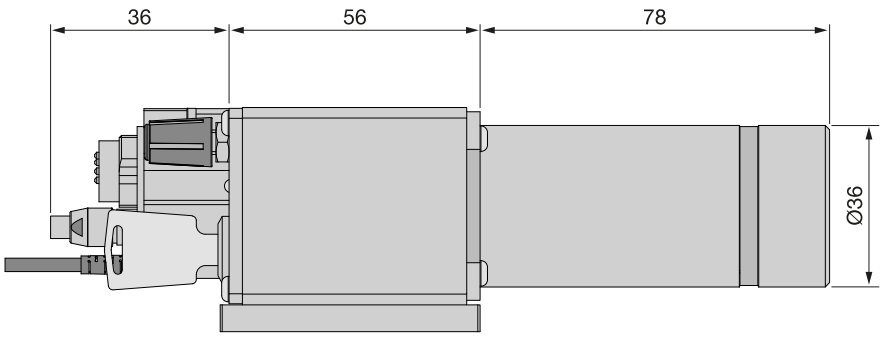
TECHNICAL DATA

51nano-N-830-11-H19-P-5-2-28-0-150

Order Code	51nano-N-830-11-H19-P-5-2-28-0-150
Will replace	51nanoFCM-N-830-11-H19-P-5-2-28-0-150
Series	51nano-N (PM)
Laser class	3B
Wavelength	830 ± 10 nm
Band width	0.7 - 4 nm
Output power	typ. 11 mW

Power adjustment		< 1 - 100 %
Power noise		typ. < 0.15 % of P_0 (RMS, BW < 1 MHz)
Coherence length		≈ 300 µm
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 connector type		FC APC (standard)
Fiber cable type		Ø 3 mm with Kevlar strain-relief
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		5 pin (male, Lumberg SV50)
Supply voltage		5.0 ± 0.2 V
Max. current consumption*		260 mA
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
Weight		530 g
Dimensions		50 x 58 x 166 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

000824000400.pdf (Dimensional drawing)

Conformity_51nano_2023_E_web.PDF (CE certificate)

ACCESSORIES

PS051003E	Power Supply 5 V
SBN050501	For laser diode beam sources of electronics type S/C/P/H and 5 V power supply
FIBER COLLIMATORS SINGLE-MODE/PM	Fiber Collimators for collimating light exiting a single-mode or polarization-maintaining fiber cable

RELATED PRODUCTS

51NANO-N (SINGLE-MODE, OEM)	Fiber-coupled low coherence laser source with single-mode fiber cable (OEM version)
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)

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