51nano-N-405-14-M29-P-12-4-18-0-150

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

FEATURES

The Laser Diode Beam Source of type 51nano-N-405-14-M29-P-12-4-18-0-150 has a reduced power noise, a reduced coherence length and a low speckle contrast.

- Reduced power noise: typ. < 0.06 % of P_0 (RMS, Bandwidth < 1 MHz)
- Reduced coherence length: coherence length ≈ 300 µm
- Reduced speckle contrast
- Wavelength: 405 nm
- Laser output power: 14 mW
- Single-mode 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

- OEM Version

DESCRIPTION

The fiber-coupled Laser Diode Beam Source of type 51nano-N-405-14-M29-P-12-4-18-0-150 has a reduced power noise (typ. < 0.06 % of P_0 (RMS, Bandwidth < 1 MHz)), reduced coherence length (≈ 300 µm) and a lowered speckle contrast.

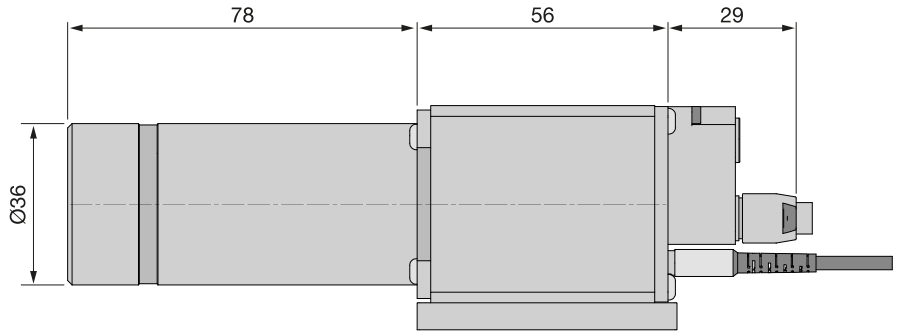
Electrical features
The output power is adjustable using a potentiometer or using the two modulation inputs for analog and TTL.

Fiber cable
The source is fiber-coupled to asingle-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 type connector (8°-polish) and an end cap to prevent fiber damage. The fiber cable has a strain-relief and a protective sleeving (Ø 3 mm). Standard cable length is 150 cm.

Options:

- Polarization-maintaining 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.



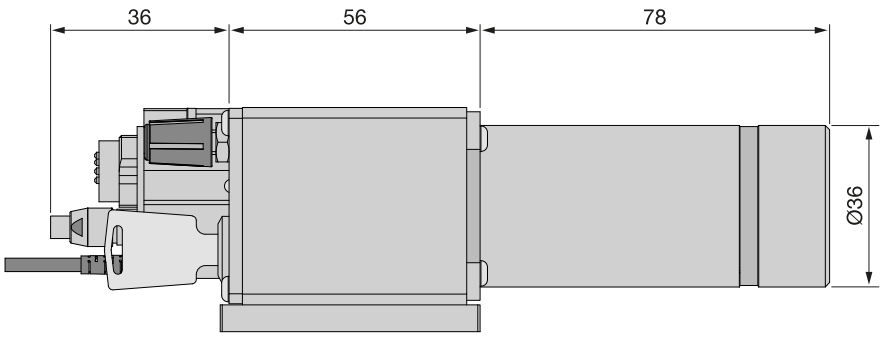
TECHNICAL DATA

51nano-N-405-14-M29-P-12-4-18-0-150

Order Code	51nano-N-405-14-M29-P-12-4-18-0-150
Will replace	51nanoFCM-N-405-14-M29-P-12-4-18-0-150
Series	51nano-N (single-mode)
Laser class	3B
Wavelength	405 ± 10 nm

Band width		0.7 - 4 nm
Output power		typ. 14 mW
Power adjustment		< 1 - 100 %
Power noise		typ. < 0.06 % of P_o (RMS, BW < 1 MHz)
Coherence length		≈ 300 µm
Fiber cable		single-mode
Fiber type		SMC-E-400Si
Nominal fiber NA		0.11
Effective fiber NA_{e^2}		0.072 ± 10 % ($1/e^2$)
Mode field diameter MFD		3.5 µm ± 10 % ($1/e^2$)
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		HP
Electr. cable length		1.5 ± 0.1 m (standard)
Connector type		4 pin (male, Lumberg SV40)
Supply voltage		12.0 ± 0.5 V
Max. current consumption*		260 mA
Modulation inputs	Analog	TTL
Max. input voltage	6.5 V	6.5 V
Voltage for P_{min} / P_O	0 V / 2.5 V	< 0.8 V / > 3.0 V
Input impedance	9 kOhm	9 kOhm
Max. modulation frequency	1 Hz	300 kHz
Time delay ON/OFF*	< 2.0/0.5 ms	< 0.5/0.2 µs
Rise / fall time*	0.5/0.5 s	0.8/0.3 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 HP
  Electronic features for electronics type HP

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

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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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