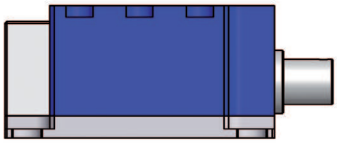
Laser Modules NANO 250 Series

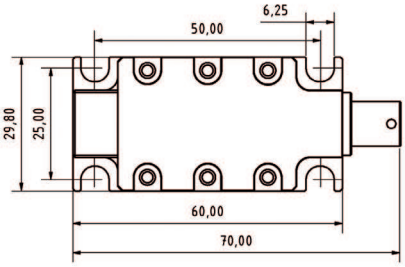
The NANO 250 series offers powerful and adjustable laser modules in compact package. The high-quality product "Made in Germany" allows universal use with tunable output power up to 400 mW. High durability, excellent beam quality and easy integration in the LINOS rail system FLS 40 assure highest flexibility for industrial, scientific and medical applications.

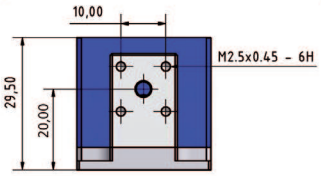
- Wide application spectrum through variable peak output up to 400 mW in compact package
- High precision temperature stabilized active TEC control
- Divergence less than 0.8 mrad, TEM_{00}
- IP67 shielded case, optionally vacuum sealed
- Microprocessor controlled driver unit with dot matrix display shows laser status
- Optional fiber coupling
- Horizontal, vertical and diagonal mounting option on metric and imperial breadboards
- Production in completely air-conditioned clean room
- Protective gas filled modules

- Divergence: < 0.8 mrad (typ.)
- Polarization: >100:1 lin.
- Drive Mode: ACC*
- Modulation Type: Analog/TTL up to 200 kHz (optional 150 MHz), except the Type NANO 250-532***
- Noise (RMS): < 1%
- Temperature Control: TEC
- CDRH Classification Class: IIIb
- Laser Head Dimensions: 70 x 30 x 31 mm (2.8 x 1.2 x 1.2 in)
- Storage Temperature:-10 °C to 55 °C (14 °F to 131 °F)
- Operation Temperature: 10 °C to 45 °C (50 °F to 113 °F)
- Laserhead Weight: 160 g
- Power Supply Dimensions: 60 x 90 x 30 mm (2.35 x 3.6 x 1.2 in)
- Cable Length to Head: 800 mm (31.5 in)**
- Modulation Input analog: 0-5 VDC, opt. TTL Hi > 2.5 V - 5 V
- DC Input Voltage: 11.5 - 30 VDC, 2.5 A
- AC PSU optional: 95 - 240 VAC, 50-60 Hz (Sec. 12 VDC)

- * Active Current Control PSU
- ** Custom length possible
- *** NANO 250-532 max. 15 kHz - AOM recommended







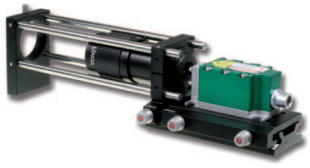
Laser modules NANO 250 Series

Item Title	Wavelength (nm)	Power (mW)	Beam Ø (mm) typical*	Beam Mode	Order-No
NANO 250-375-15	375±5	15	1.1x2.8	TEMoo	G04 0945 000
NANO 250-405-15	405±5	15	1.1x2.8	TEMoo	G04 0930 000
NANO 250-405-80	405±5	80	1.1x2.8	TEMoo	G04 0946 000
NANO 250-405-130	405±5	130	1.1x2.8	TEMoo	G04 0947 000
NANO 250-445-40	445±5	40	1.1x2.8	TEMoo	G04 0931 000
NANO 250-445-450	445±5	450	1.1x2.8	Multi	G04 0938 000
NANO 250-473-20	473±1	20	Ø 1.2	TEMoo	G04 0932 000
NANO 250-488-15	488±5	15	1.1x2.8	TEMoo	G04 0948 000
NANO 250-532-100	532±1	100	Ø 1.2	TEMoo	G04 0933 000
NANO 250-532-200	532±1	200	Ø 1.2	TEMoo	G04 0949 000
NANO 250-635-25	635±1	25	1.1x3.1	TEMoo	G04 0934 000
NANO 250-643-80	643±5	80	1.1x2.8	TEMoo	G04 0935 000
NANO 250-643-150	643±5	150	1.1x2.8	TEMoo	G04 0950 000
NANO 250-659-80	659±5	80	1.1x2.2	TEMoo	G04 0951 000
NANO 250-659-150	659±5	150	1.1x2.2	TEMoo	G04 0952 000
NANO 250-785-100	785±5	100	1.1x2.8	TEMoo	G04 0953 000

*Circular and other Dimensions available

A closer look

The NANO 250 Series Laser Modules are specially designed for use on the Flat Rail System FLS 40 and are compatible to our Microbench system.



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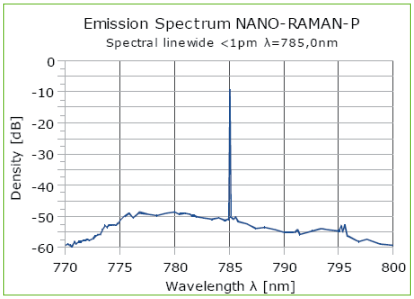
NEW



Laser Modules NANO 250 RAMAN

The compact and powerful NANO 250 series RAMAN laser modules have been developed specially for scattered light activation in RAMAN spectroscopy. Distinguishing features include narrow band, stability and excellent beam quality.

- Excellent beam quality
- Wavelength locked
- Stable output power
- High precision temperature stabilized active TEC control
- Divergence less than 0.8 mrad, TEM_{00}
- IP67 shielded case, optionally vacuum sealed
- Microprocessor controlled driver unit with dot matrix display shows laser status
- Optional fiber coupling
- Horizontal, vertical and diagonal mounting option on metric and imperial breadboards
- Production in completely air-conditioned clean room
- Protective gas filled modules

- Wavelength: 785 nm
- Output power: 80 mW
- Beam quality M^2: < 1.2
- Divergence: <1.0 mrad (typ.)
- Polarization: > 100:1 lin.
- Drive Mode: ACC*
- Modulation Type: Analog/TTL up to 200 kHz (optional 100 MHz)
- Noise (RMS): <1%
- Temperature Control: TEC
- CDRH Classification Class: IIIb
- Laser Head Dimensions: 70 x 30 x 31 mm (2.8 x 1.2 x 1.2 in)
- Storage Temperature: -10 °C to 55 °C (14 °F to 131 °F)
- Operation Temperature: 10 °C to 45 °C (50 °F to 113 °F)
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- DC Input Voltage: 11.5 - 30 VDC, 2.5 A
- AC PSU optional: 95 - 240 VAC, 50-60 Hz (Sec. 12 VDC)

- * Active Current Control PSU
- ** Custom length possible

Laser modules NANO 250 RAMAN

Item Titel	Spectral linewidth (nm)	Order-No
NANO 250-785-100-RAMAN-1N	< 1.0	G04 0954 000
NANO 250-785-100-RAMAN-1P	< 0.001	G04 0955 000

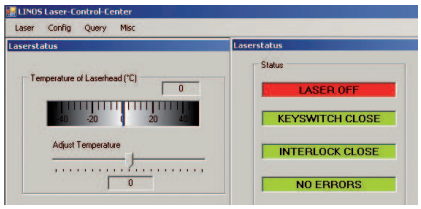
Q-Enabled

Raman spectroscopy is an indispensable tool in chemical, biological and biomedical analysis. It provides a high density of information regarding the chemical composition and molecular structure of the samples tested.

Until just a few years ago, prohibitively high cost of Raman spectrometers meant that these instruments were found only in the research laboratories of large companies and research facilities. Read more in Optolines 21 or online.

NEW

Software Package NANO 250



Similar to the remote control, you can use the NANO 250 operating software* with a PC to adapt the optimal working field of the laser perfectly to the demands of the application at hand, and store the settings.

- Compatibility with all NANO 250 systems
- Output indicator
- Temperature display
- Power and temperature remote control
- Wavelength shift of up to ±5 nm
- Programmable output gradients
- Visual representation of measured values
- Storage and reloading of preset values

Equipment supplied:

- Software CD
- USB / Micro USB cable
- *Compatible with power supply version 2.0

Software Package NANO 250

Item Title	Order-No
Software Package NANO 250	G04 0958 000

NEW

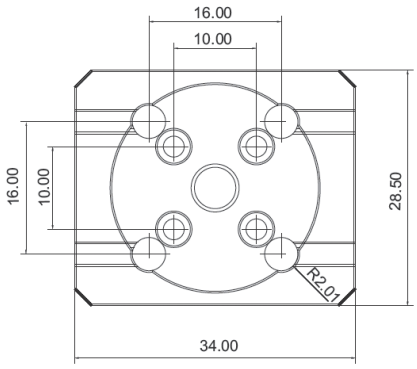
Mounting Plate NANO 250 FN

NANO 250 RAMAN with Nanobench

The universal adapter lets you mount the fiber coupler (available separately) or the LINOS Nanobench® system, and is attached directly to the front plate of the laser using four M 2.5 screws.

The fiber coupler is plugged into the universal adapter through a bore hole and secured by threaded connectors. No further centering is required.

The adapter has four bore holes of 4 mm diameter for adaptation to the Nanobench® system.



NANO 250 RAMAN with Fiber coupler

Universal Mounting Plate NANO 250

Item Title	Order-No
Mounting Plate NANO 250 FN	G04 0956 000

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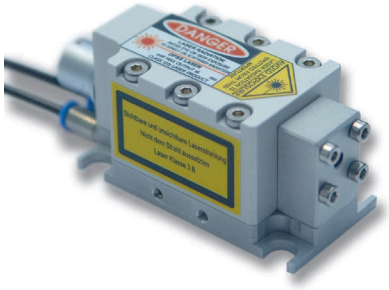
NEW

Option Water cooling system NANO 250



If the composition or dimensions of the mounting surface used in your application or assembly do not sufficiently discharge excessive heat, an additional cooling system is recommended to ensure reliable operation.

All NANO 250 laser modules can be fitted at the factory with a base plate equipped with coolant ducts and pipe connectors. Please pay attention that this is only available for new orders, retrofitting is not possible.

- Base plate with coolant ducts
- Connector with plug-in adapter and piping set, 2 m (D=3.0 mm)

- A heat exchanger with a set of liquids is also available on request.

Option Water cooling system NANO 250

Item Title	Order-No
Option Water cooling system NANO 250	on request

NEW

Option Fiber Coupler NANO 250

The NANO 250 fiber coupler can be fitted onto any module in the NANO 250 Series, using the 250 FN adapter, for applications with single-mode or multimode fibers. This fiber coupler plugs into the universal adapter through a bore hole and is secured by threaded connectors, with no further centering required. A wide range of achromatic lenses with various focal lengths and anti-reflective coatings is available for optimum adaptation to the particular wavelength and beam diameter.

The fiber coupler can be equipped with an SMA, FC or FC-APC fiber connector.

- Single-mode/multimode version
- Fiber connector: SMA, FC or FC-APC
- Outstanding coupling efficiency
- Achromatic optics
- Low back reflection
- High precision
- Excellent long-term stability
- Mounting plate (G04 0956 000) included

- Coupling efficiency, single-mode, typical: > 60%
- Coupling efficiency, multimode, typical: > 90%
- Back reflection: < 0.5 %

A closer look

Please specify the following parameters with your order:

- Wavelength
- Beam diamater
- Connector type
- NANO module

Option Fiber Coupler NANO 250

Item Title	Order-No
Option Fiber Coupler NANO 250	on request