

FLEXPOINT® Dot Laser Modules

FLEXPOINT® dot laser modules are available with either circular or elliptical output beam. Due to sophisticated electronics, a wide range of laser diodes in terms of wavelength and output power levels can be used.

In addition, the options found below in the table are also available for order and make the FLEXPOINT® laser module a universal tool.

Features

- Circular or elliptical beam
- Wavelengths from 405 nm to 905 nm (including 450 nm, 488 nm, 520 nm, 635 – 660 nm)
- Different output power levels for all wavelengths
- Adjustable or preset focus or collimated laser beam
- Choice of small or ruggedized housing

Applications

- Alignment, pointing and positioning
- Measurement tasks
- Medical, biophotonics



Specifications

Wavelength	405 nm / 450 nm / 488 nm / 520 nm / 635 – 640 nm / 650 – 660 nm / 670 nm / 685 nm / 785 nm / 850 nm / 905 nm (other wavelengths on request)
Output power	From <1 mW up to 100 mW, see wavelength/output power matrix
Power stability	Better +/-5% (after warm up)
Beam profile	Circular or elliptical
Beam diameter at exit	Circular: 4.5 mm / Elliptical 3 mm x 1.5 mm
Beam divergence	Circular: 0.2 mrad / Elliptical: 1 mrad
Bore sighting	<8.7 mrad
Pointing stability	<50 µrad/°C
Focussing options	Collimated / adjustable focus / focus preset at factory
Focussing range	95 mm to collimation for modules with circular beam; 50 mm to collimation for modules with elliptical beam; (shorter focussing range on request)
Operating voltage	4.5 – 6 VDC, reverse voltage protection 4.5 – 30 VDC as option, 10 – 30 VDC for 405/450/488/520 nm
Power consumption	30 – 150 mA, depending on laser diode
Operating temperature	0 – 50 °C (depending on used laser diode, temperature range can be extended)
Storage temperature	-10 °C to +60 °C
Housing size	Standard: 57 mm length, 11.5 +0/-0.03 mm diameter (520 nm: 71 mm length) Ruggedized: 63 mm length, 19.0 +0/-0.03 mm diameter
Housing material	Black anodised aluminium, isolated (potential free)
Cable length	2.0 m
Options	Option P: Power adjustment with external potentiometer Option D: Power adjustment with analog voltage signal 0 – 5 V (active low default, active high as option) Option M: Digital modulation up to 10 kHz 0 – 5 V (active low default, active high as option) Higher frequencies on request Pattern generators (diffractive optical elements DOE's, see separate datasheet) Different housing style
Accessories	Mount, power supply, laser safety eyewear

Wavelength / Output Power Matrix

The table below shows the available output power levels at different wavelengths (power measured after optics) for laser modules with circular and elliptical beam profile

Laser Modules with Circular Beam

Wavelength	Output Power
405 nm	<1 – 5 mW 6 – 20 mW 21 – 70 mW
450 nm	<1 – 40 mW
488 nm	<1 – 30 mW
520 nm	<1 – 3 mW 3 – 17 mW
635 – 640 nm	<1 mW 2 – 5 mW 6 – 8 mW 9 – 17 mW 18 – 40 mW
650 – 660 nm	<1 mW 2 – 20 mW 21 – 40 mW 41 – 70 mW
670 nm	<1 mW 2 – 5 mW
685 nm	<1 – 30 mW
780 – 785 nm	<1 – 50 mW
830 nm	<1 – 70 mW
850 nm	<1 mW 2 – 30 mW
905 nm	<1 – 5 mW

Laser Modules with Elliptical Beam

Wavelength	Output Power
405 nm	<1 – 16 mW 17 – 100 mW
450 nm	<1 – 70 mW
488 nm	<1 – 40 mW
520 nm	<1 – 5 mW 5 – 30 mW
635 – 640 nm	<1 – 3 mW 4 – 7 mW 8 – 13 mW 14 – 35 mW 36 – 60 mW
650 – 660 nm	<1 – 3 mW 4 – 25 mW 26 – 60 mW 61 – 100 mW
670 nm	<1 – 3 mW 4 – 7 mW
685 nm	<1 – 40 mW
780 – 785 nm	<1 – 70 mW
830 nm	<1 – 130 mW
850 nm	<1 – 5 mW 6 – 40 mW
905 nm	<1 – 7 mW

Typical Spot Sizes

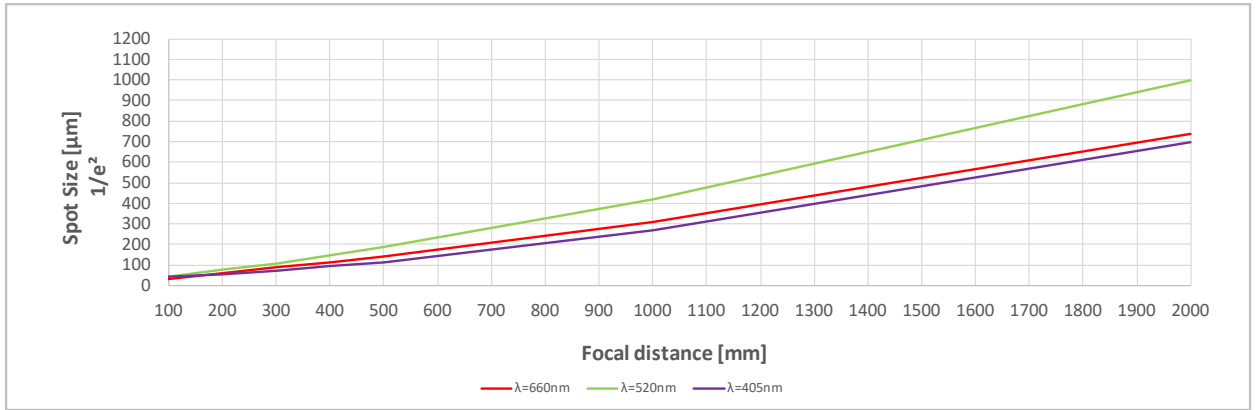
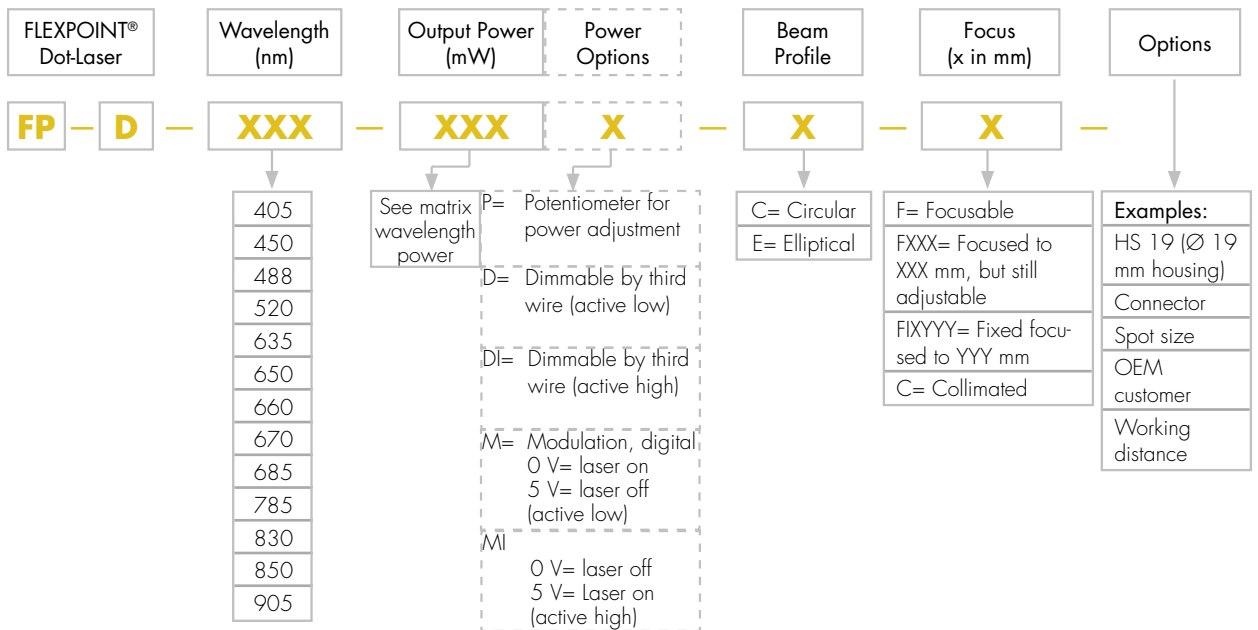


Fig. 1: The diagram shows the minimum spot sizes at certain focus distances (typical values).
Typical spot size: 660 nm, 520 nm, 405 nm

Ordering Code FLEXPOINT® Dot Lasers



Modulation Curves

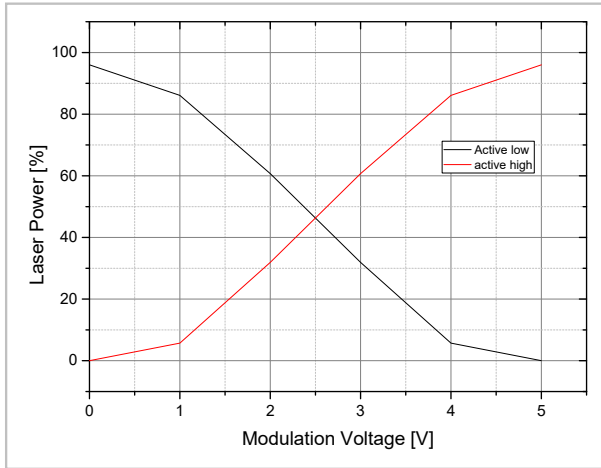


Fig. 2: Typical graph of an active high/active low logic for option D/DI (power adjustment)

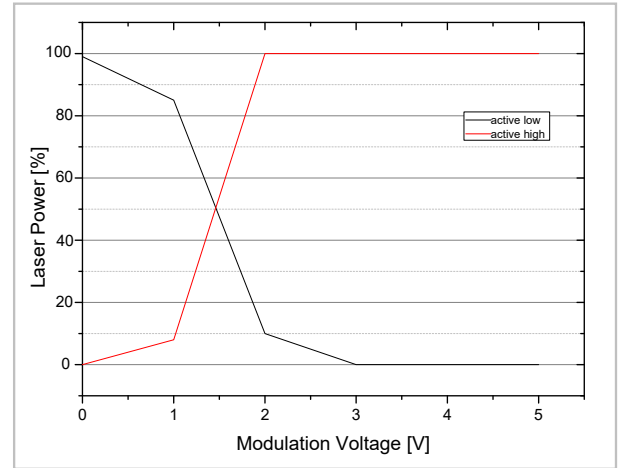


Fig. 3: Typical graph of an active high/active low logic for option M/MI (digital modulation)

Mechanical Drawings

Fig. 4: Standard (small) housing (Ø 11.5 mm)

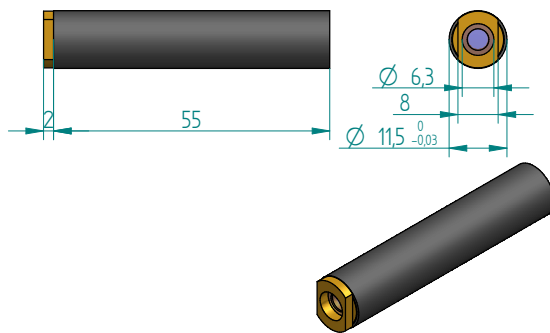
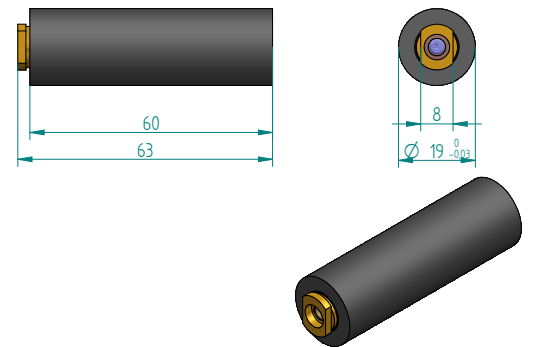


Fig. 5: Ruggedized housing (Ø 19 mm)



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