

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

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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 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

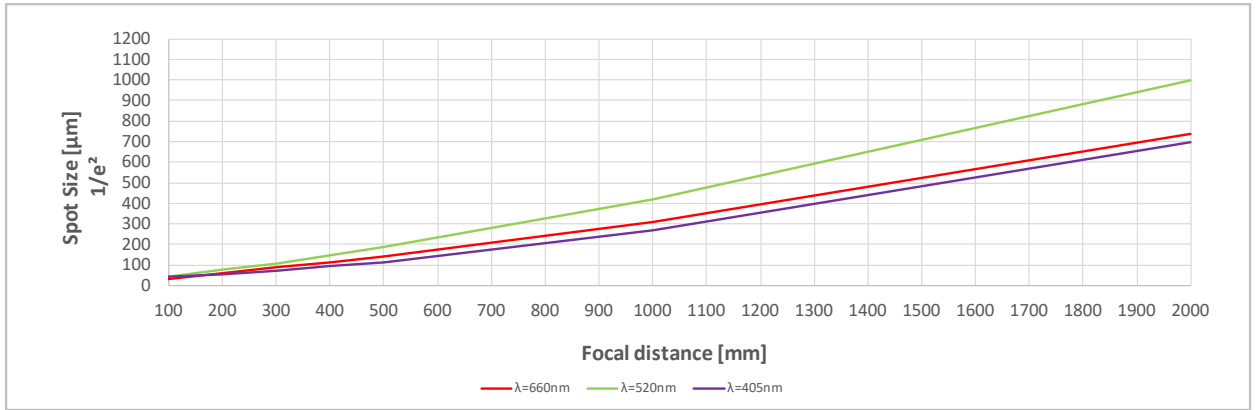
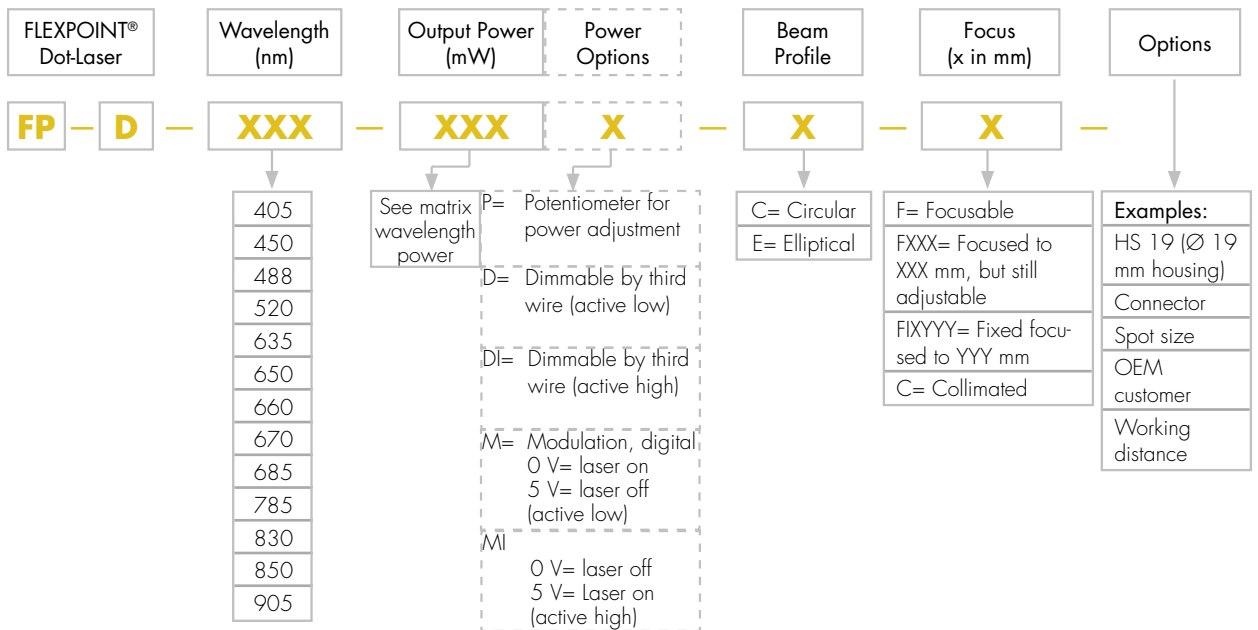


Fig. 1: The diagram shows the minimum spot sizes at certain focus distances (typical values).
Typical spot size: 660 nm, 520 nm, 405 nm

Ordering Code FLEXPOINT® Dot Lasers



Modulation Curves

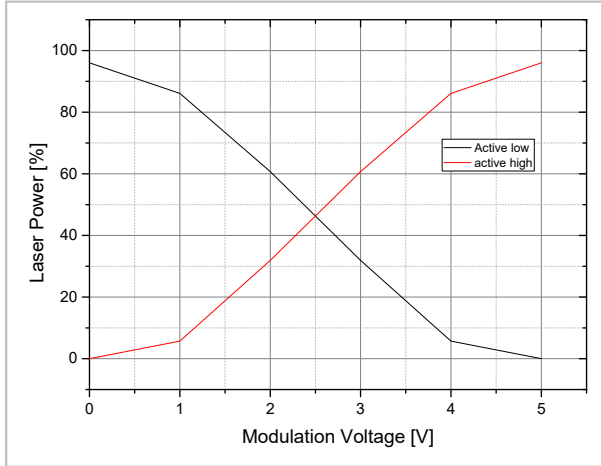


Fig. 2: Typical graph of an active high/active low logic for option D/DI (power adjustment)

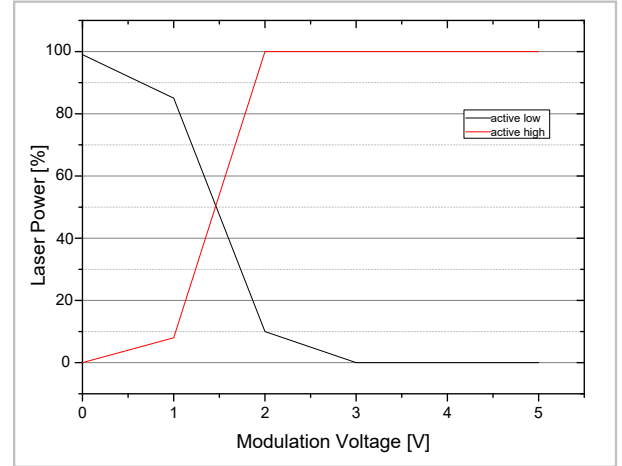


Fig. 3: Typical graph of an active high/active low logic for option M/MI (digital modulation)

Mechanical Drawings

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

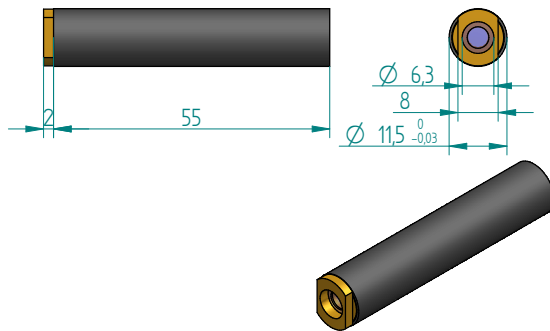
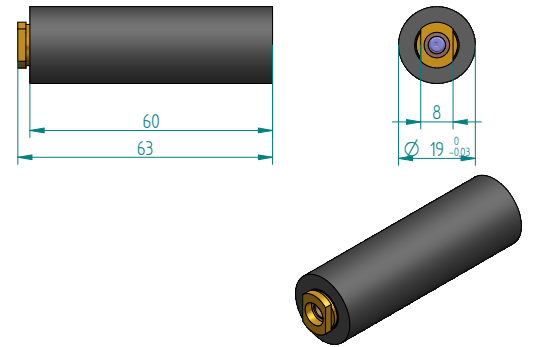


Fig. 5: Ruggedized housing (Ø 19 mm)



Product Changes

LASER COMPONENTS reserves the right to make changes to the product(s) or information contained herein without notice.

No liability is assumed as a result of their use or application.

Ordering Information

Products can be ordered directly from LASER COMPONENTS or its representatives. For a complete listing of representatives, visit our website at www.lasercomponents.com

Custom designed products are available on request.

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