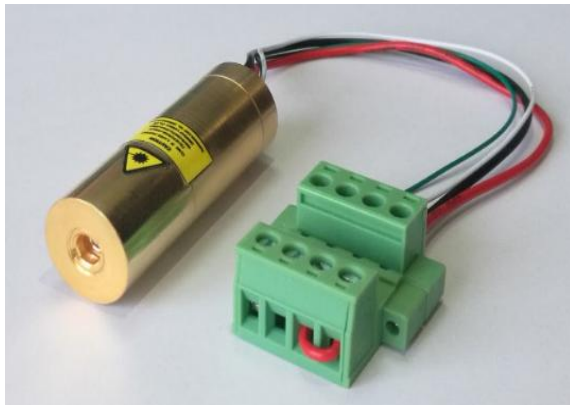


# Green 520nm Laser Module

## Wide Temperature Range

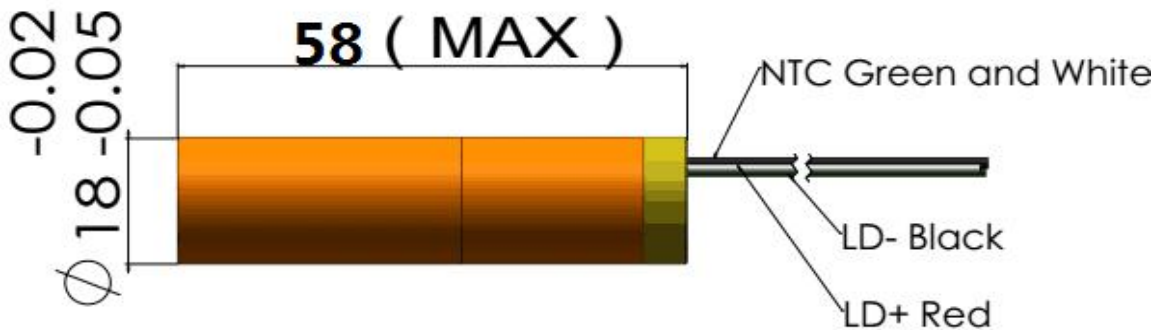


**G520D1000-18x58-40**

### Features

- DPSS Laser
- Wide Temperature Range
- Fast Rise Time
- High Reliability

### Dimensions (Unit: mm)



| Specifications                                       |               |                           |            |            |
|--|---------------|---------------------------|------------|------------|
| <b>Model Number</b>                                  |               | <b>G520D1000-18x58-40</b> |            |            |
| <b>Mechanical Specifications</b>                     |               | <b>Min</b>                | <b>Typ</b> | <b>Max</b> |
| Laser Head   | Diameter (mm) | 17.95                     | -          | 17.98      |
|  | Length (mm)   | -                         | -          | 58         |
|  | Weight (g)    | -                         | -          | 250        |
| Housing Material                                     |               | Brass with gold-plating   |            |            |
| <b>Optical Specifications</b>                        |               | <b>Min</b>                | <b>Typ</b> | <b>Max</b> |
| Wavelength (nm) <sup>(1)</sup>                       |               | 519                       | 520        | 524        |
| Output Power (mW) at T <sup>(2)</sup> at 6A          |               | 900                       | 1000       | -          |
| Spectral Bandwidth                                   |               |                           |            | 1          |
| Output Power (mW) from -30 to 50°C                   |               | 300                       | -          | -          |
| Power Stability at const. Temperature <sup>(3)</sup> |               | -                         | +/- 2%     | +/- 5%     |
| Output Power Mode                                    |               | CW                        |            |            |
| Laser Class  |               | 4                         |            |            |

(1) 3 peaks exist(520nm, 522nm and 524nm), see test result in Page 4

(2) see remarks in page 2 no# 4

(3) after max. 3 minutes

| <b>Beam Specifications</b>                      |                             | <b>Min</b>   | <b>Typ</b>        | <b>Max</b> |
|---|-----------------------------|--|-------------------|------------|
| Beam Divergence (mrad) <sup>(1)</sup>           |                             | -  | 40                | 50         |
| Beam Alignment Tolerance                        | Position ( $\Delta r$ , mm) | -  | -                 | 0.5        |
|   | Off-axis Angle (mrad)       | -  | 35                | 60         |
| Beam Diameter at Output Window (mm)             |                             | -  | 0.5               | -          |
| Beam Roundness                                  |                             | -  | NA <sup>(2)</sup> | -          |
| Beam Mode Longitude                             |                             | Multi  |                   |            |
| Beam Mode Transverse                            |                             | TEM <sub>n</sub> <sup>(2)</sup>  |                   |            |
| Polarization Ratio (Linear)                     |                             | 100:1  | -                 | -          |
| M <sup>2</sup>                                  |                             | -  | -                 | 50         |
| Residual IR                                     |                             | -  | -                 | 1%         |
| <b>Electrical Specifications</b>                |                             | <b>Min</b>   | <b>Typ</b>        | <b>Max</b> |
| Power Type                                      |                             | ACC  |                   |            |
| LD Voltage (DC, V)                              |                             | 1.8  | 2                 | 2.3        |
| LD Operating Current (mA) at 2V                 |                             | -  | 5,500             | 6,000      |
| Thermistor Constants                            |                             | A = 2.231e <sup>-3</sup> B = 4.694e <sup>-5</sup><br>C = 0.884e <sup>-6</sup>  |                   |            |
| Thermistor Resistance                           |                             | 6.6K $\Omega$ @35 $^{\circ}$ C    8.2K $\Omega$ @30 $^{\circ}$ C<br>10.0K $\Omega$ @25 $^{\circ}$ C    12.3K $\Omega$ @20 $^{\circ}$ C<br>16.4K $\Omega$ @15 $^{\circ}$ C    18.5K $\Omega$ @10 $^{\circ}$ C |                   |            |
| Power Consumption (W)                           |                             | -  | 13                | 14         |
| Housing Isolation                               |                             | No   |                   |            |
| ESD protection                                  |                             | No   |                   |            |
| Wire Length (mm) <sup>(3)</sup>                 |                             | 200 (+/-50)  |                   |            |
| Wire Type <sup>(3)</sup>                        |                             | 20AWG / 28AWG  |                   |            |
| <b>Reliability</b>                              |                             | <b>Min</b>   | <b>Typ</b>        | <b>Max</b> |
| Operating NTC Temperature Range ( $^{\circ}$ C) |                             | T+0.3  | T <sup>(4)</sup>  | T-0.3      |
| Rise Time (seconds) at 5.5A <sup>(5)</sup>      |                             | -  | 3                 | 5          |
| Storage Temperature ( $^{\circ}$ C)             |                             | 0  | -                 | 40         |
| Environmental Humidity (RH, %)                  |                             | 5  | -                 | 85         |
| Lifetime (hours) (MTTF at T <sup>(4)</sup> )    |                             | 5,000  | -                 | -          |
| RoHS Compliance Declaration                     |                             | Yes  |                   |            |

(1) Full Angle ( $1/e^2$ )

(2) See picture 5 on page 3 for example of beam spot

(3) Wire Length can be customized. 20AWG for LD wires. 28AWG for NTC wires.

(4) T is one optimum LD operating temperature between 15 to 35 $^{\circ}$ C reflected by NTC resistance and will be advised in each test report.

(5) to 50% of full Output Power. Dot (~10mW) can be seen after 0.2s if >1A

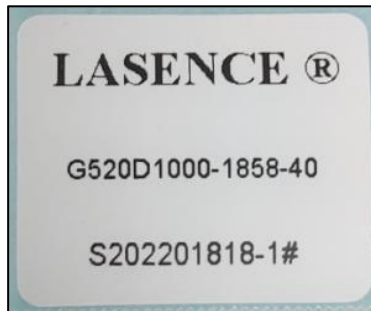
## Remarks

- Product ID for placing orders: G520D1000-1858-40
- Datasheet Version: 1
- No Photodiode
- Customer is responsible for suitable heat sinking
- Label on plastic bag (see picture 2):
  - LASENCE®
  - G520D1000-1858-40
  - Lasence Order Number - Module Number
  - Label Length: 30mm (+/-3mm); Width: 25mm (+/-3mm)
- Anti-static protector for transportation (see picture 4)
- Example of beam spot (see picture 5)
- Laser Beam Warning Label on module housing (see picture 1)
- Laser Marking on module housing (see picture 3):
  - Lasence Material Code
  - Lasence Order Number - Module Number

**Picture 1**



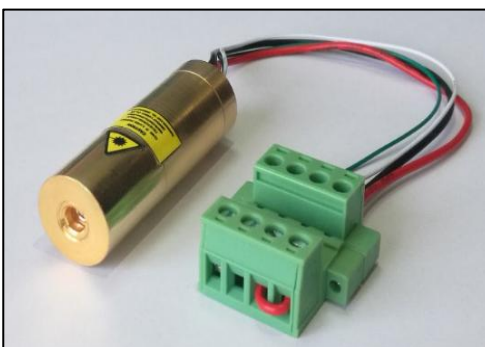
**Picture 2**



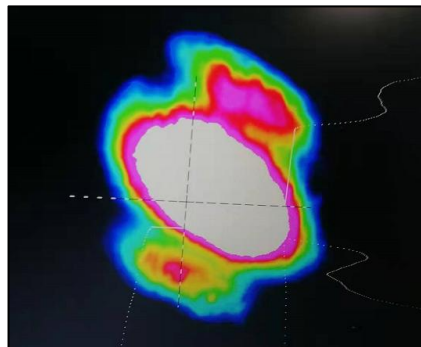
**Picture 3**



**Picture 4**



**Picture 5**



Picture 1

