

# QDLASER

## QLD1161-2030/8030 series

1120/1180 nm DFB Laser Butterfly Package

**Preliminary**

C00108-02 August 2015



### 1. DESCRIPTION

The QLD1161-2030/8030 series are 1120/1180-nm distributed feedback (DFB) lasers for use in scientific and industrial applications. The laser is assembled into a 14-pin butterfly package with an optical isolator, a monitor PD and a thermo-electric cooler.

### 2. FEATURES

- Single longitudinal mode operation at 1120 or 1180 nm
- Fiber-pigtailed 14-pin butterfly package with a TEC
- Optical isolator integration
- Polarization maintaining fiber integration
- Two types of pigtailed fiber diameter are available: 900  $\mu\text{m}$  or 250  $\mu\text{m}$

### 3. APPLICATIONS

- Seed source for SHG
- Sensing

### 4. ABSOLUTE MAXIMUM RATINGS

| PARAMETER                        | SYMBOL    | RATING    | UNIT               |
|----------------------------------|-----------|-----------|--------------------|
| Optical Output power             | $P_f$     | 50        | mW                 |
| LD Forward Current               | $I_F$     | 250       | mA                 |
| LD Reverse Voltage               | $V_{RLD}$ | 2         | V                  |
| TEC Drive Current                | $I_{TEC}$ | 2         | A                  |
| TEC Drive Voltage                | $V_{TEC}$ | 4.3       | V                  |
| Operation Temperature            | $T_c$     | 0 to 60   | $^{\circ}\text{C}$ |
| Storage Temperature              | $T_{stg}$ | -40 to 85 | $^{\circ}\text{C}$ |
| Lead Soldering Temperature (5 s) | $T_{sld}$ | 230       | $^{\circ}\text{C}$ |

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## 5. OPTICAL AND ELECTRICAL CHARACTERISTICS

( $T_{LD} = 25^{\circ}\text{C}$ , unless otherwise specified)

| PARAMETER                              |              | SYMBOL          | TEST CONDITION                                    | MIN   | TYP  | MAX   | UNIT             |
|--|--------------|-----------------|---|-------|------|-------|------------------|
| Peak Wavelength                        | QLD1161-2030 | $\lambda_p$     | CW, $P_f=30\text{ mW}$                            | 1115* | 1120 | 1125* | nm               |
|  | QLD1161-8030 |                 |   | 1175* | 1180 | 1185* |                  |
| Temperature Coefficient of $\lambda_p$ |              | $d\lambda_p/dT$ | CW  | -     | 0.08 | -     | nm/K             |
| Current Coefficient of $\lambda_p$     |              | $d\lambda_p/dI$ | CW  | -     | 0.01 | -     | nm/mA            |
| Fiber Output Power                     |              | $P_f$           | CW  | 30    | -    | -     | mW               |
| Threshold Current                      |              | $I_{th}$        | CW  | -     | 30   | -     | mA               |
| Operation Current                      |              | $I_{op}$        | CW, $P_f=30\text{ mW}$                            | -     | 150  | 200   | mA               |
| Operation Voltage                      |              | $V_{op}$        | CW, $P_f=30\text{ mW}$                            | -     | 1.7  | 2.0   | V                |
| Sidemode Suppression Ratio             |              | SMSR            | CW, $P_f=30\text{ mW}$                            | -     | 40   | -     | dB               |
| Polarization Extinction Ratio          |              | PER             | CW, $P_f=30\text{ mW}$                            | 15    | 20   |       | dB               |
| Monitor PD Current                     |              | $I_m$           | CW, $P_f=30\text{ mW}$                            | 50    | 100  | 1000  | $\mu\text{A}$    |
| Thermistor Resistance                  |              | $R_{th}$        | $T_{LD} = 25^{\circ}\text{C}$ , $B=3900\text{ K}$ | 9.5   | 10   | 10.5  | $\text{k}\Omega$ |

\*Peak wavelength tolerance of  $\pm 2\text{ nm}$  is available as an option.

## 6. PRODUCT PART NUMBER

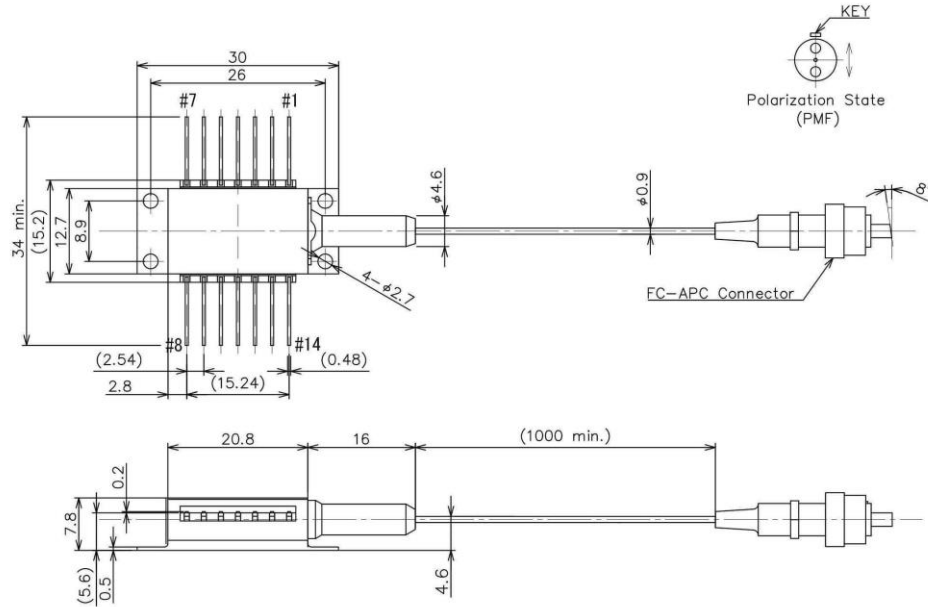
| Part Number     | Peak Wavelength | Output Power | Fiber Diameter | Connector |
|-----------------|-----------------|--------------|----------------|-----------|
| QLD1161-2030    | 1120 nm         | 30 mW        | 900 μm         | FC/APC    |
| QLD1161-2030-11 |                 |              | 250 μm         | Ferrule   |
| QLD1161-8030    | 1180 nm         |              | 900 μm         | FC/APC    |
| QLD1161-8030-11 |                 |              | 250 μm         | Ferrule   |

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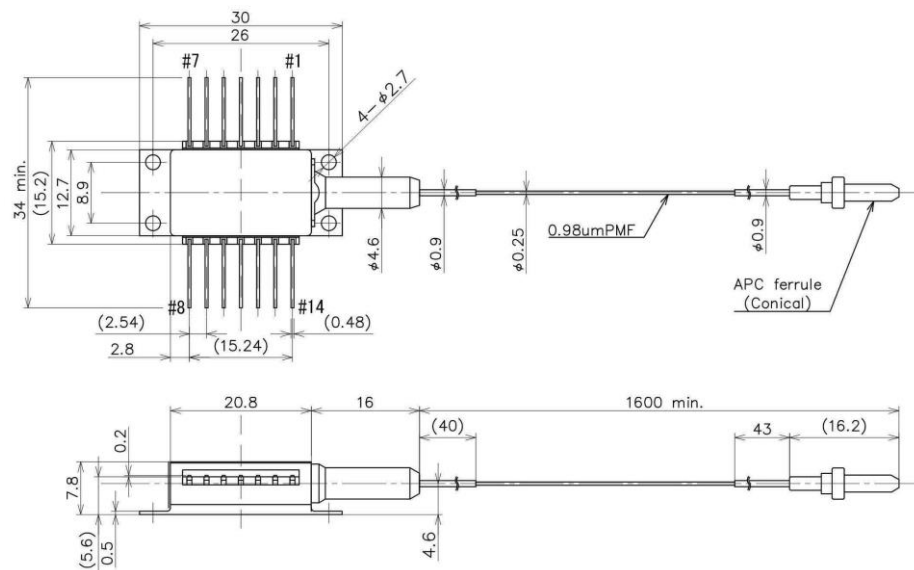
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## 7. OUTLINE DRAWING



(a) 900  $\mu\text{m}$  fiber diameter and FC/APC connector type



(b) 250  $\mu\text{m}$  fiber diameter and ferrule type

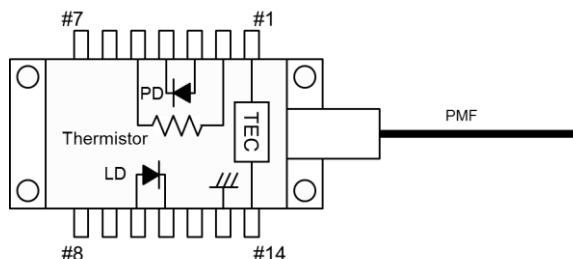
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## 8. PIN CONFIGURATION

| No. | Description | No. | Description   |
|-----|-------------|-----|---------------|
| 1   | TEC (+)     | 8   | NC            |
| 2   | Thermistor  | 9   | NC            |
| 3   | PD Anode    | 10  | Laser Anode   |
| 4   | PD Cathode  | 11  | Laser Cathode |
| 5   | Thermistor  | 12  | NC            |
| 6   | NC          | 13  | Case Ground   |
| 7   | NC          | 14  | TEC (-)       |



## 9. NOTICE

### • Safety Information

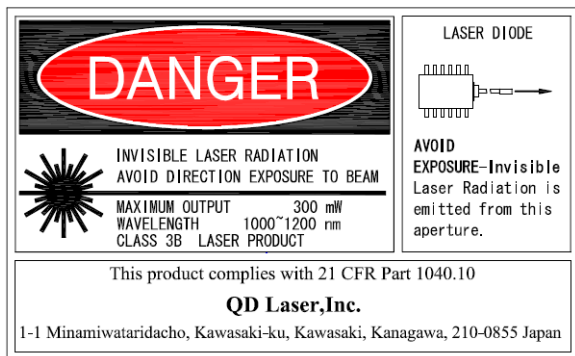
This product is classified as Class 3B laser product, and complies with 21 CFR Part 1040.10.  
Please do not take a look at laser lighting in operations since laser devices may cause troubles to human eyes.  
Please do not eat, burn, break and make chemical process of the products since they contain GaAs material.

### • Handling products

Semiconductor lasers are easily damaged by external stress such as excess temperature and ESD.  
Please pay attention to handling products, and use within range of maximum ratings.  
QD Laser takes no responsibility for any failure or unusual operation resulting from improper handling, or unusual physical or electrical stress.

### • RoHS

This product conforms to RoHS compliance related EU Directive 2011/65/EU.



**QD Laser, Inc.**

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