

# LDI-1371-DFB-10G-20

Preliminary

## OVERVIEW

LDI-1371-DFB-10G-20 is the MQW laser diode coupled to an optical fiber and packaged into a hermetic case

## MAIN FEATURES

- Wavelength: 1371 nm
- Cavity type: DFB
- Linewidth: 1 MHz
- Data rate up to 10 Gbps
- Optical power: up to 20 mW in CW mode in SM fiber G.657.A1
- Package types: coaxial, coaxial with bracket
- Built-in monitor photodiode

## APPLICATIONS

- Optical fiber communication systems with data rate up to 10 Gbps
- Laser systems

## ORDERING INFORMATION

# LDI-1371-DFB-10G-20-X-12-X-X-X-X

### Case type

**U:** compact coaxial (pulse mode only)

**B:** compact coaxial with double-sided bracket

Other type on request

### Fiber type

**SM1:** SM, G.657.A1, [Corning SMF-28 Ultra](#), furcation tubing Ø0.9 mm or **BSM1** Ø0.25mm

**SM3:** SM, G.657.B3, [Corning ClearCurve ZBL](#), furcation tubing Ø0.9 mm or **BSM3** Ø0.25mm

**SMP13:** PM, [Fujikura SM13](#), PANDA type, furcation tubing Ø0.9 mm (25% less optical power)

Other type on request

### Connector type

**FA:** FC/APC (SM1, SM3, SMP13)

**FU:** FC/UPC (SM1, SM3, MM5, MM6)

**SA:** SC/APC (SM1)

**SU:** SC/UPC (SM1)

**N:** no connector

Other type: on request

### Test measurements

**CW:** CW mode (electro-optical parameters at T=25+/-5 C and spectrum)

### Fiber length

**0.5:** 500+/-50 mm

**1.0:** 1000+/-100 mm

Other length on request

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## ABSOLUTE MAXIMUM RATINGS

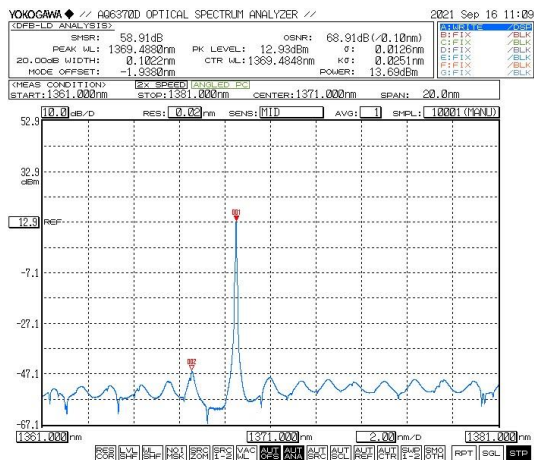
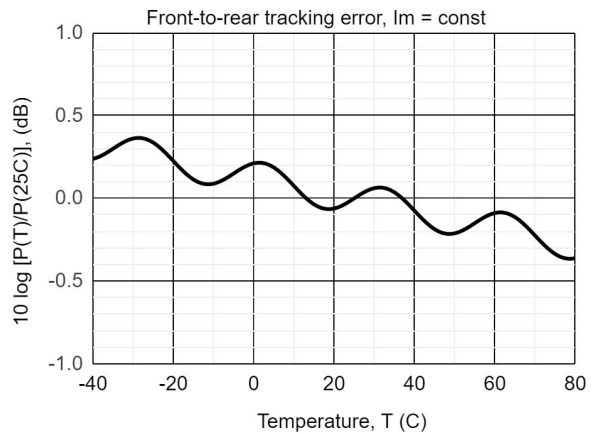
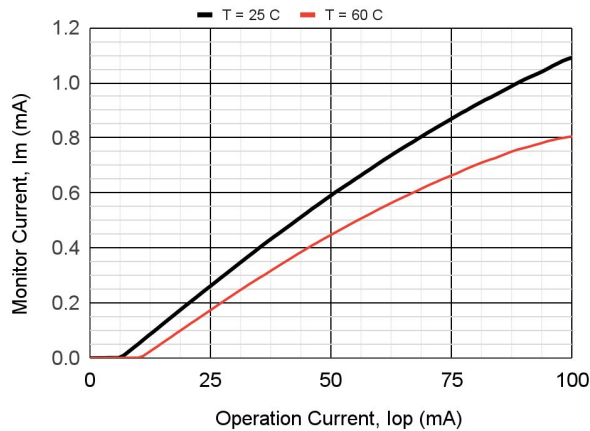
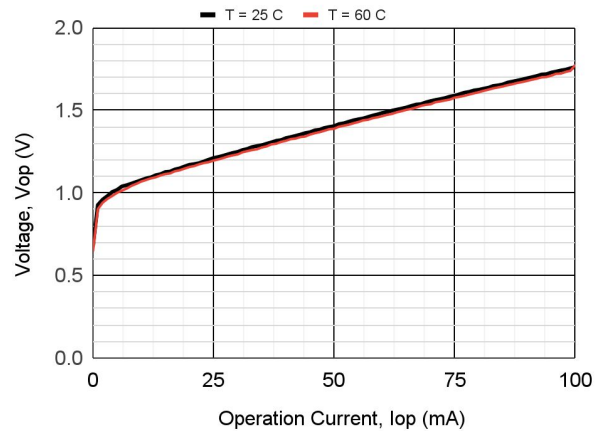
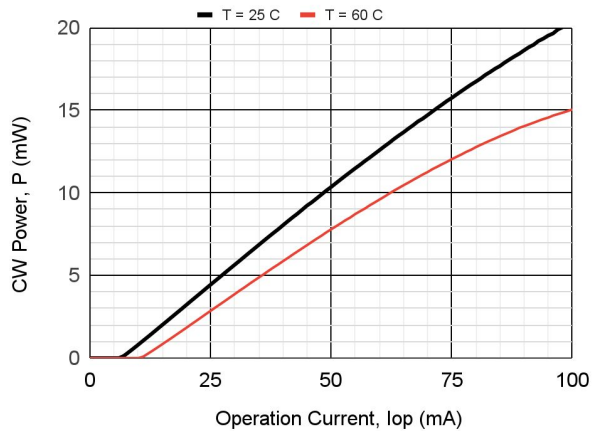
| Parameter                   |            | Value     | Unit | Conditions      |
|-----------------------------|------------|-----------|------|-----------------|
| Laser diode forward current | $I_{FL}$   | 105       | mA   | CW, T = 25°C    |
| Laser diode reverse voltage | $V_{RL}$   | 2         | V    |                 |
| Photodiode reverse voltage  | $V_{RP}$   | 20        | V    |                 |
| Photodiode forward current  | $I_{FP}$   | 2         | mA   |                 |
| Operating temperature       | $T_{OP}$   | -40 - +85 | °C   | Package U, B    |
| Storage temperature         | $T_{stg}$  | -40 - +85 | °C   |                 |
| Soldering temperature       | $T_{sold}$ | 260       | °C   | Max. 10 seconds |

## ELECTRICAL-OPTICAL CHARACTERISTICS (T = 25 °C)

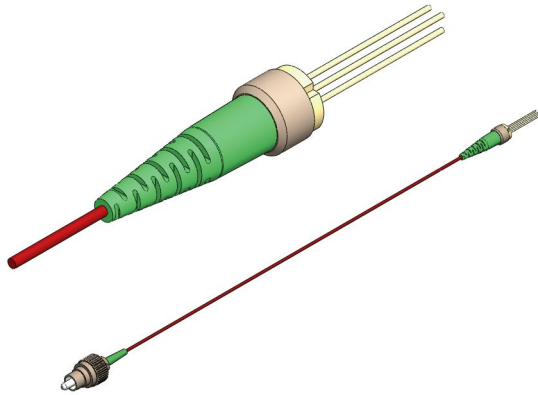
| Parameter                      |                 | MIN  | TYP  | MAX  | Unit  | Conditions                                            |
|--------------------------------|-----------------|------|------|------|-------|-------------------------------------------------------|
| Optical power (CW)             | $P_{CW}$        | 20   |      |      | mW    | CW, $I_{op}$ = 100 mA, SM1                            |
| Wavelength                     | $\lambda$       | 1368 |      | 1373 | nm    | CW, $I_{op}$ = 100 mA, SM1                            |
| Spectral width                 | $\Delta\lambda$ |      | 0.11 |      | nm    | CW, $I_{op}$ = 100 mA, -20 dB, OSA                    |
| Spectral width                 | $\Delta\lambda$ |      | 1    |      | MHz   | CW, $I_{op}$ = 100 mA, delayed self-heterodyne method |
| Wavelength-temperature coeff.  | $d\lambda/dT$   |      | 0.11 |      | nm/°C |                                                       |
| Side-mode suppression ratio    | SMSR            | 35   |      |      | dB    | CW, $I_{op}$ = 100 mA                                 |
| Threshold current              | $I_{th}$        |      | 7    | 12   | mA    | CW                                                    |
| Slope efficiency               | $S_e$           | 0.20 |      |      | W/A   | CW, SM1                                               |
| Operating voltage              | $V_{op}$        |      | 1.6  | 1.8  | V     | CW, $I_{op}$ = 100 mA                                 |
| Tracking error                 | $E_r$           |      | 0.5  | 1.0  | dB    | CW, P = 3 mW; T = -40 ÷ +85 °C                        |
| Monitoring output current (PD) | $I_m$           | 0.2  | 1.0  | 5.0  | mA    | CW, $I_{op}$ = 100 mA, $V_{rd}$ = 5V                  |
| Capacitance (PD)               | $C_t$           |      | 5.5  | 10   | pF    | $V_{rd}$ = 5 V, f = 1 MHz                             |
| Dark current (PD)              | $I_d$           |      |      | 100  | nA    | $V_{rd}$ = 5 V                                        |
| Polarization extinction ratio  | PER             | 20   |      |      | dB    | CW, SMP13                                             |

Tracking error  $E_r = \max [10 \lg [P(T)/P(25^\circ\text{C})]]$ ,  $I_m = \text{const}$ ,  $T = T_{\min} \div T_{\max}$

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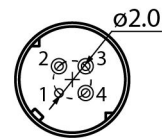
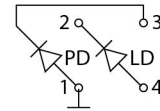
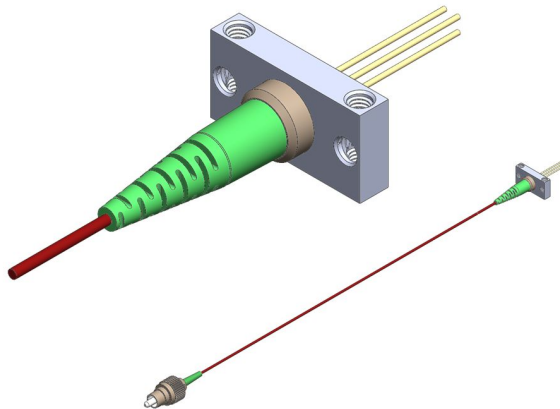


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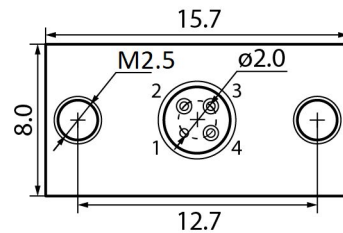
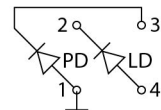
## PACKAGE U

BACK VIEW

PINOUT  
#12[Download more information](#)[PDF Drawing](#)[STEP 3D model](#)[PDF Application Notes](#)

## PACKAGE B

BACK VIEW

PINOUT  
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Characteristics, data, materials and structures specified in this datasheet are subject to change without notice. Please refer to the latest specification before use of the products.

## **Safety and handling cautions**

1. Avoid smashing and burning of the module. Avoid storing and using the module in conditions where water, organic solvents or aggressive acids or bases may contact the module or where there is a possibility of exposure to corrosive gases, explosive gases, dust, salinity or other harsh conditions. The module should be disposed as special industrial waste.
2. Exceeding absolute maximum ratings even for a short time can cause permanent damage of the module.
3. The module is sensitive to and can be broken by ESD (static electricity).

## **Conflict Minerals Policy Statement**

LasersCom LLC achieves business objectives and customer needs with social responsibility. We do not support or contribute to the violence and human rights violations associated with the mining of conflict minerals coming from Conflict Regions according to US "Dodd-Frank Act". When possible, our suppliers' conflict mineral statements are reviewed. We do not directly purchase Conflict Minerals from any source and do not knowingly procure any parts and products containing Conflict Minerals from Conflict Regions.

## **RoHS Compliance Statement**

Restriction of Hazardous Substances (RoHS) directive (Directive 2011/65/EC amended with Directive (EU) 2015/863) is the directive aimed at reducing the harmful environmental impact of waste electrical equipment by restricting the use of known dangerous substances. Based on information received from our supply sources, LasersCom LLC hereby states that the banned substances listed in the RoHS directive are not found in the parts and materials used above the threshold level listed other than exceptions approved by the European Commission.

## **REACH Compliance Statement**

Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) is a European Union regulation 1907/2006/EC that addresses the production and use of chemical substances, and their potential impacts on human health and the environment. Based on information received from our supply sources, LasersCom LLC hereby states compliance of the parts and materials used in manufacturing to REACH regulation. LasersCom LLC does not manufacture or import any substances or preparations as defined under REACH.