

### DL-3300AR Series

### Uncooled **1310 nm MQW-DFB LD** for CATV return path application

#### DESCRIPTION

DL-3300AR series are designed for coupling a single mode optical fiber with 1310 nm MQW-DFB uncooled laser diode. DL-3300AR series are the best kits as light source for CATV return path application.

#### FEATURES

- 1310 nm Uncooled DFB Laser Diode with MOW Structure
- High Reliability, Long Operation Life
- Single Frequency Operation with High SMSR
- -20 to 85°C operation without active cooling
- Built-in InGaAs monitor photodiode
- Low Inter-modulation Distortion
- Built-in Isolator

#### CHARACTERISTICS

ELECTRICAL AND OPTICAL CHARACTERISTICS (T <sub>c</sub> = 25°C)						
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>th</sub>	Threshold Current	CW, Room Temperature		10	15	mA
		CW, Over Temperature			45	mA
I <sub>op</sub>	Operation Current	CW, Room Temperature			45	mA
		CW, Over Temperature			100	mA
V <sub>op</sub>	Operating Voltage	CW, I <sub>f</sub> =I <sub>op</sub>		1.2	1.5	V
P <sub>f</sub>	Optical Output Power Part No.: DL-3308AR DL-3318AR DL-3328AR DL-3338AR DL-3348AR DL-3358AR	CW, I <sub>f</sub> =I <sub>op</sub>		0.2		mW
				0.5		
				1.0		
				2.0		
				3.0		
				4.0		
λ <sub>c</sub>	Central Wavelength	CW, I <sub>f</sub> =I <sub>op</sub>	1290	1310	1330	nm
SMSR	Side Mode Suppression Ratio	CW, I <sub>f</sub> =I <sub>op</sub>	30	35		nm
ΔP <sub>f</sub> / P <sub>f</sub>	Tracking Error	APC, -20~85 °C	-1		1	dB
I <sub>m</sub>	PD monitor Current	CW, I <sub>f</sub> =I <sub>op</sub> , V <sub>RD</sub> =1V	100		1500	μA
I <sub>D</sub>	PD Dark Current	V <sub>RD</sub> =5V			0.1	μA
C <sub>t</sub>	PD Capacitance	V <sub>RD</sub> =5V, f=1 MHz		10	15	pF
IMD2	Second-Order Intermodulation	(*1)			-50	dBc
IMD3	Third-Order Intermodulation	(*1)			-55	dBc
CNR	Carrier to Noise Ratio	(*2)	51			dB
BF	Bandpass Flatness	Peak to Valley, 5~300 MHz			1.0	dB
RIN	Relative Intensity Noise	f=5~300 MHz			-145	dB/Hz
Iso	Optical Isolation	λ=1310 nm	30			dB

Note: \*1. 20 Km fiber loss, 2-tone (13 MHz and 19 MHz), OMI=0.1 for each RF Channel.

\*2. 1-tone with OMI=0.2, through 20 km fiber

### ABSOLUTE MAXIMUM RATINGS

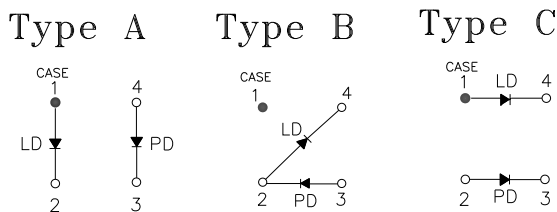
Stress in excess of the absolute maximum rating can cause permanent damage to the device. These are absolute stress rating only. Functional operation of the device is not implied at these or any other conditions in excess of these given in the operational sections of the datasheet. Exposure to absolute ratings for extended periods can adversely affect device reliability.

Parameter	Symbol	Min	Max	Unit
Optical Output Power (3308AR/3318AR/3328AR/3338AR/3348AR/3358AR)	P <sub>O</sub>		0.5 / 1 / 2 / 3 / 4 / 5	mW
LD Reverse Voltage	V <sub>RL</sub>		2	V
PD Reverse Voltage	V <sub>RD</sub>		10	V
PD Forward Current	I <sub>FD</sub>		1	mA
Soldering Temperature	T <sub>solder</sub>		260 / 10	°C / sec
Operating Temperature Range	T <sub>op</sub>	-20	85	°C

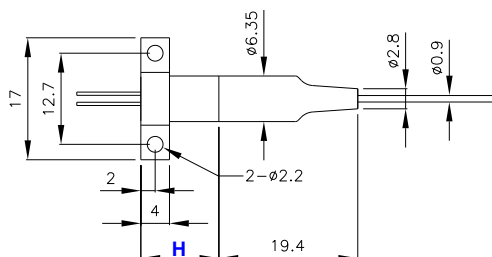
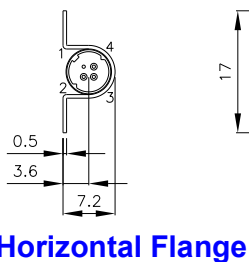
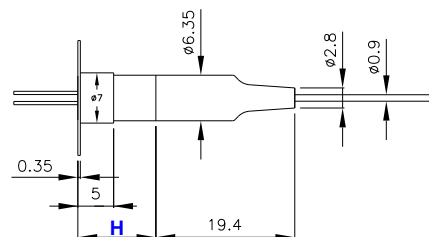
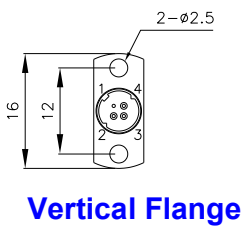
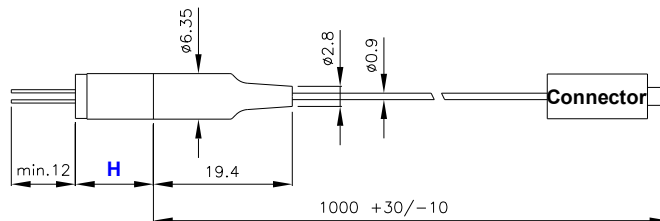
### PRECAUTIONS for USE

- ESD protection is imperative. Use of grounding straps, anti-static mats, and other ESD protective equipment is recommended when handling or testing any junction photodiodes.
- Fiber pigtailed should be handled with less than 10N pull and with a bending radius greater than 30 mm.

### MECHANICAL DIMENSION (mm) and PIN ASSIGNMENT



P/N	H
DL-3308AR-XXS	7.6
DL-3318AR-XXS	7.6
DL-3328AR-XXS	9
DL-3338AR-XXS	9
DL-3348AR-XXS	10.9
DL-3358AR-XXS	10.9



### ORDER INFORMATION

Part No.: D L - 3 3   AR -    S

Code	Pout (mW)
0	0.2
1	0.5
2	1
3	2
4	3
5	4

Code	Pin Assignment
0	Type A
5	Type B
8	Type C

Code	Flange
V	Vertical
H	Horizontal
X	No Flange

Code	Isolator
S	Single-Stage

Code	Connector
S	SC/PC
F	FC/PC
T	ST/PC
L	LC/PC
X	No connector
SA	SC/APC
FA	FC/APC
TA	ST/APC
LA	LC/APC

Code	Application
AR	CATV Return Path

**Note:** Specifications subject to change without notice.

### Revision History

Version	Subject	Release Date
1.0	Initial datasheet	2008/6/1
2.0	Add Pin assignment Type A, Pout Code 0/1/2 .	2017/12/4