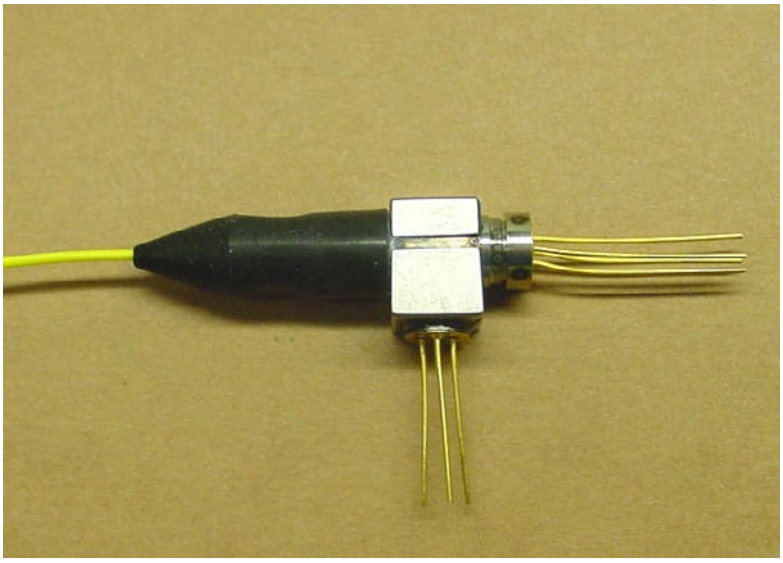
PC35H Series SM Y Dual Laser Combiner Modules

PD-LD Inc. now offers its next generation of Dual Wavelength Laser Combiner Modules. These devices are designed to couple light from two different semiconductor laser diodes into a single optical fiber output. Single fiber dual wavelength combiner modules offer the user the simplicity of using a single device when configuring equipment that requires the output of two different laser wavelengths.. These Combiner Modules combine two sources in a single housing thus relieving the user of having to fusion splice two discreet lasers along with a coupler and then squeeze them onto their PCB.



These small , compact modules require minimal board real estate and may be specified by combining any combination of the following three wavelengths:

- 1310 nm
- 1550 nm

Modules using 1310 and 1550 nm DFB lasers may be specified . Pulsed lasers, suitable for OTDR applications are also available at both 1310 and 1550 nm.

The PD-LD product incorporates low threshold current, high differential quantum efficiency MQW Multiple Quantum Well) FP semiconductor lasers whose typical total operating currents are less than 30 mA. These low current consuming laser diodes are well suited for equipment using battery power sources. Low threshold and drive currents help to extend operating duration between battery recharge or replacement.

Features

- **Output Power –7dBm to 0dBm**
- **-20 to +70° Operating Temperature**
- **Choice of Wavelengths**
  1310nm
  1550nm

Compact, rugged construction

- **Low Threshold Current Laser**
- **Low Power Consumption**
- **Available with optical connectors**
- **Replaces Discreet Lasers and Optical Couplers**
- **Class 1 Eye Safe Device**
- **UL Listed**

Applications

- **Stabilized Light Source**
- **Hand Held Instruments**
- **Fiber Loss Measurement**
- **Fiber Plant Characterization**

PD-LD's Combiner modules are built to meet the demanding requirements of the instrumentation marketplace. These units are assembled using state of the art YAG Laser welding processes. This technique guarantees a semiconductor to optical fiber interface that remains stable over mechanical and environmental extreme.Monitor diode to fiber output tracking error is guarenteed for less than 1dB over the –20 to +70C operating temperature range. The optical semiconductor die are mounted within hermetically sealed TO can subassemblies making them impervious to contaminants and moisture.
Combiner modules are built with 1 meter long 9/125/900 um SMF28 fiber optic pigtails. These fibers may be terminated with most standard fiber optic connectors including FC, SC, ST and LC.

Absolute Maximum Ratings Parameters

Module	Symbol	Rating	Units
Operating Temp	T_{OP}	-20 to 70	ºC
Storage Temp	T_{STG}	-40 to 85	ºC
Soldering Temp	T_{SLD}	250	ºC
Laser Diode			
Forward Current	$I_{F(LD)}$	I_{TH} + 50	mA
Reverse Voltage	$V_{R(LD)}$	2	V
Monitor Diode			
Forward Current	$I_{F(MD)}$	2	mA
Reverse Voltage	$V_{R(MD)}$	20	V

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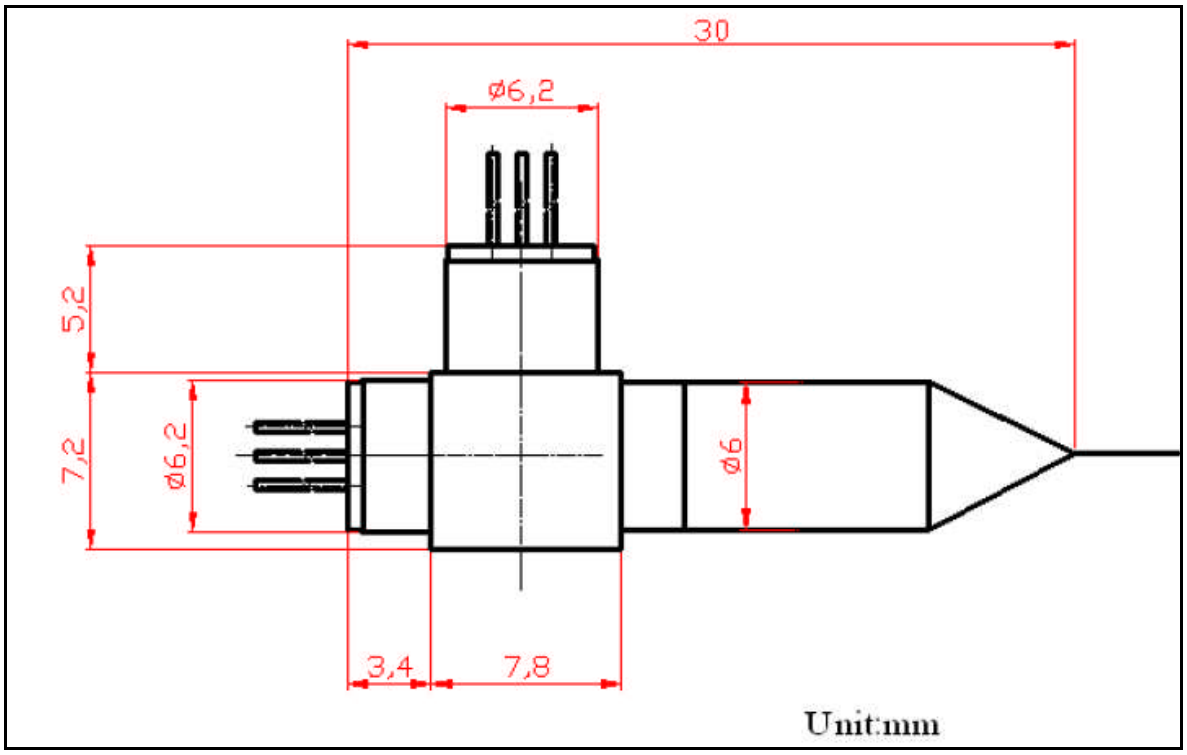
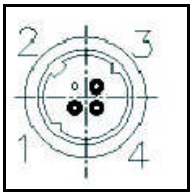


PIN-Out "H"
1. PD Anode
2. LD Anode / Ground
3. Ld Cathode
4. PD Cathode

PIN-Out "T"
1. LD Anode / PD Cathode
2. Ground
3. LD Cathode
4. PD Anode



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Dual Laser Combiner Module Characteristics and Parameters						
	Symbol	**MIN.**	**TYP.**	**MAX**	**Units**	**Test Condition**
Laser Diode						
Power	P_O	1.0		2.0	mW	CW
Threshold Current 1310nm	I_{TH}	-	8	15	mA	CW
Threshold Current 1550nm	I_{TH}	-	10	15	mA	CW
Operating Current 1310nm	I_{OP}	-	Ith + 20	35	mA	$I_F = I_{OP}$
Operating Current 1550nm	I_{OP}	-	Ith + 20	35	mA	$I_F = I_{OP}$
Operating Voltage	V_{OP}	-	1.1	1.5	V	$I_F = I_{OP}$
Peak Wavelength 1310nm	Lambda	1290	1310	1330	nm	25ºC
		1275		1345	nm	-20 to 70°C
Peak Wavelength 1550nm	Lambda	1530	1550	1570	nm	25ºC
		1515		1585	nm	-20 to 70°C
Spectral Width	Delta Lambda	-	1.0	3.0	nm	RMS,-20dB
Rise/Fall Time	t_r, t_f	-	0.3	0.7	nsec	10~90%
Monitor Diode						
Output	I_{MD}	0.05	0.5		mA	$I_F = I_{OP}$, P_O
Dark Current	$I_{D(MD)}$	-	0.001	0.01	µA	$V_{R(MD)}$=10V
Capacitance	$C_{(MD)}$	-	10	20	pF	$V_{R(MD)}$=10V, f=1MHz
Module						
Tracking Error		-1		+1	dB	-20 to 70ºC

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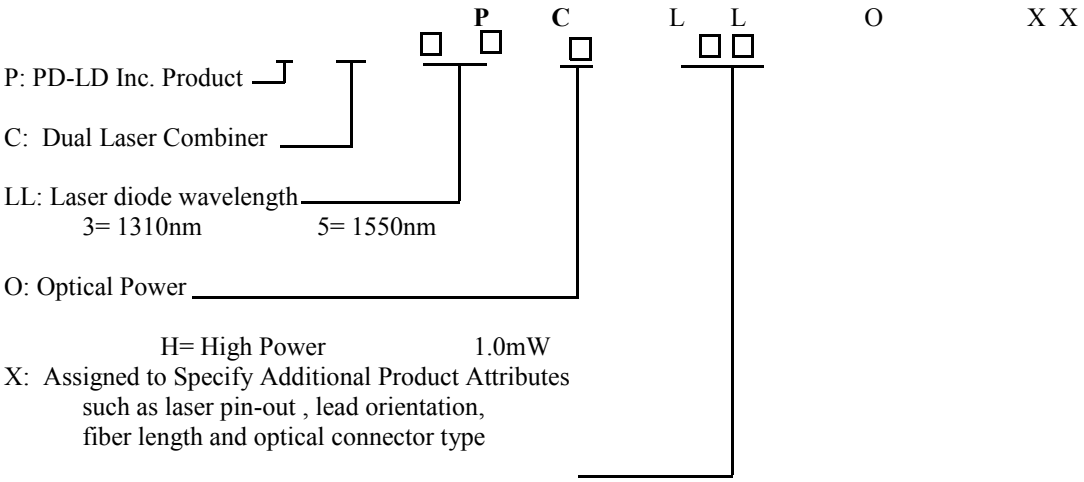
Ordering Information



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