

NEC

InGaAsP STRAINED MQW-DFB
PULSED LASER DIODE MODULE
FOR 1310 nm OTDR APPLICATION

NDL7510P
SERIES

FEATURES

- **HIGH OUTPUT POWER:**
Pf = 55 mW @IFP = 400 mA¹
- **LONG WAVELENGTH:**
λc = 1310 nm
- **INTERNAL THERMOELECTRIC COOLER, THERMISTOR**
- **HERMETICALLY SEALED 14 PIN DUAL-IN-LINE PACKAGE**
- **SINGLE MODE FIBER PIGTAIL**

Note:

1. Pulse Conditions: Pulse width (PW) = 10 μs, Duty = 1%.

DESCRIPTION

The NDL7510P is a 1310 nm laser diode DIP module with single mode fiber and internal thermoelectric cooler. It has a Multiple Quantum Well (MQW) structure and is designed for light source of optical measurement equipment (OTDR).

ELECTRO-OPTICAL CHARACTERISTICS (TLD = 25°C, Tc = -20 to +65°C, unless otherwise specified)

PART NUMBER			NDL7510P Series		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
VFP	Forward Voltage, IFP = 1000 mA, PW = 10 μs, Duty = 1%	V		2.5	4.0
Pf	Optical Output Power from Fiber, IFP = 400 mA, PW = 10 μs, Duty = 1%	mW	40	55	
ITH	Threshold Current	mA		20	30
λc	Center Wavelength, IFP = 400 mA, PW = 10 μs, Duty = 1%, RMS (-20 dB)	nm	1290	1310	1330
σ	Spectral Width, IFP = 400 mA, PW = 10 μs, Duty = 1%,RMS (-20 dB)	nm			10
tr	Rise Time, 10-90%	ns		0.5	1.0
tf	Fall Time, 90-10%	ns		0.7	1.0

ELECTRO-OPTICAL CHARACTERISTICS
APPLICABLE TO THERMISTOR AND TEC: (TLD = 25°C, Tc = -20 to +65°C, unless otherwise specified)

PART NUMBER			NDL7510P Series		
SYMBOLS	PARAMETERS AND CONDITIONS	UNITS	MIN	TYP	MAX
R	Thernistor Resistance, TLD = 25°C	kΩ	9.5	10	10.5
B	B Constant	K	3300	3400	3500
Ic	Cooler Current, ΔT = 40 K	A		0.6	1.0
Vc	Cooler Voltage, ΔT = 40 K	V		1.1	1.5
ΔT ¹	RMS Center Wavelength, IFP = 400 mA, PW = 10 μs,	K	40		

Note:

1. ΔT = | Tc - TLD |.

ABSOLUTE MAXIMUM RATINGS¹

(T_c = 25°C, unless otherwise specified)

SYMBOLS	PARAMETERS	UNITS	RATINGS
P _F	Optical Output Power from Fiber ²	A	80
I _{FP}	Pulsed Forward Current ²	mA	600
V _R	Reverse Voltage	V	2.0
I _c	Cooler Current	A	1.3
V _c	Cooler Voltage	V	3.5
T _c	Operating Case Temperature	°C	-20 to +65
T _{STG}	Storage Temperature	°C	-40 to +70
T _{SLD}	Lead Soldering Temperature (10 s)	°C	260

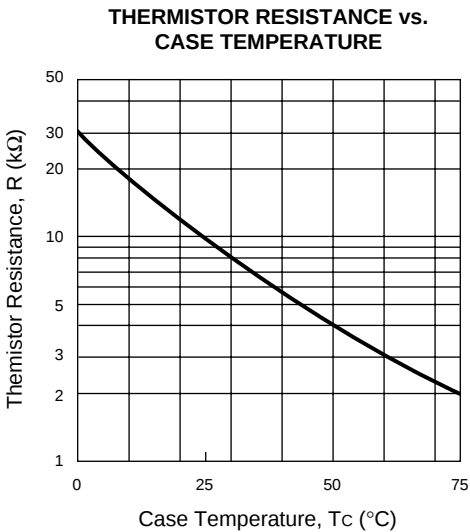
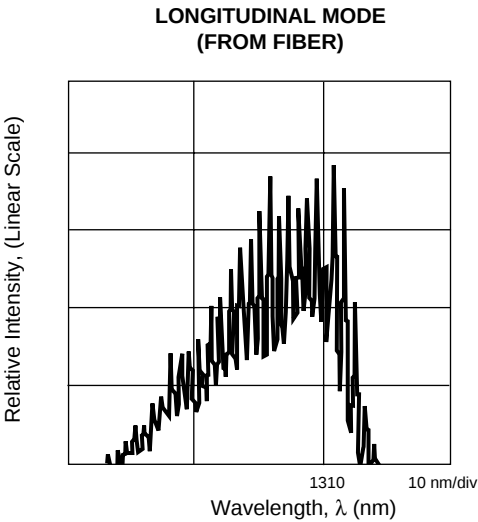
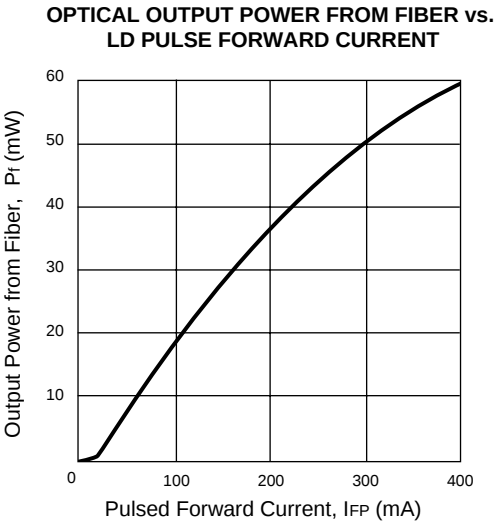
Notes:

1. Operation in excess of any one of these parameters may result in permanent damage.
2. Pulse Condition: Pulse Width (PW) = 10 μs, Duty = 1 %.

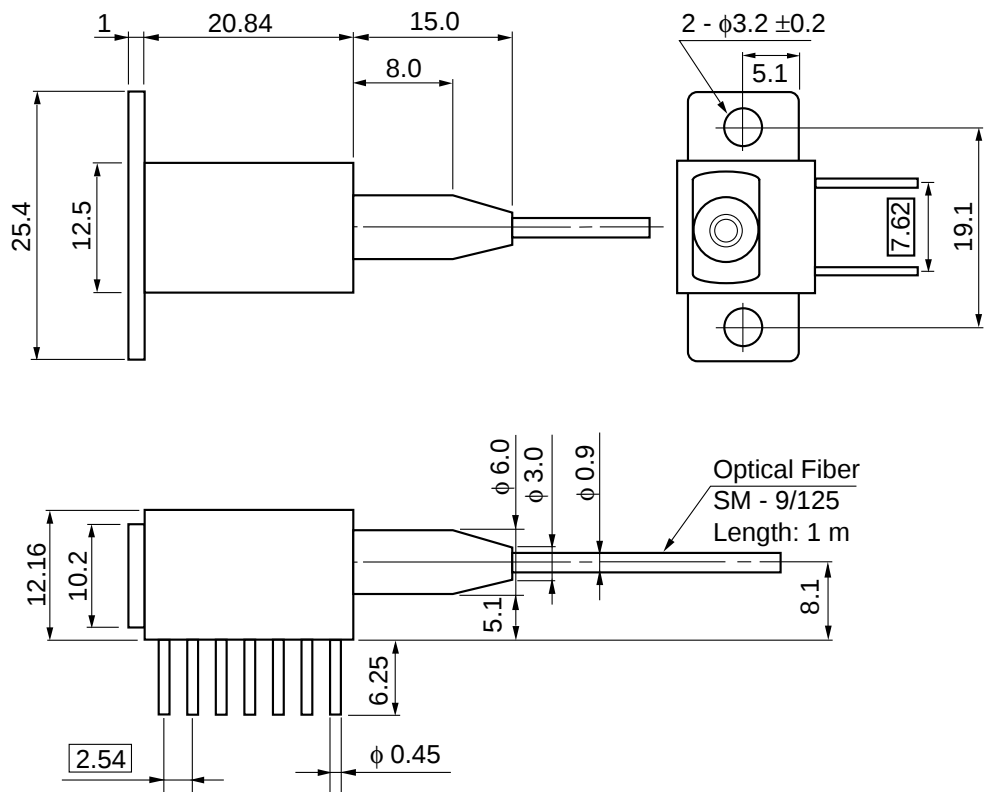
TYPICAL PERFORMANCE CURVES (T_c = 25°C, unless otherwise specified)

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
NDL7510P	Without Connector
NDL7510PC	With FC-PC Connector



OUTLINE DIMENSIONS (Units in mm)



PIN CONNECTIONS

PIN No.	FUNCTION	PIN No.	FUNCTION
1	COOLER ANODE	8	NC
2	NC	9	LASER CATHODE
3	NC	10	LASER ANODE, CASE GROUND
4	NC	11	THERMISTOR
5	LASER ANODE, CASE GROUND	12	THERMISTOR
6	NC	13	NC
7	NC	14	COOLER CATHODE

BOTTOM VIEW

