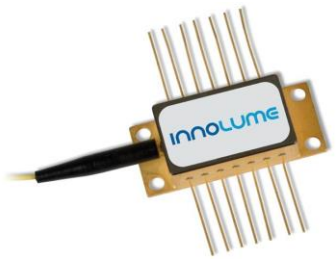
Innolume GmbH
Konrad-Adenauer-Allee 11, 44263 Dortmund/Germany
Phone: +49 231 47730 200; Web: www.innolume.com

DFB-10XX-YY-50

Fiber Coupled Distributed-Feedback Laser Diode with Integrated Optical Amplifier



Features:

- 50mW output power ex-single mode fiber
- Available wavelength range 1020-1120nm
- Mode-hop free continious tuning
- Proprietary mirror coating technology enabling high reliability
- PM980 or HI1060 fiber
- Individual burn-in and thermal cycling screening
- Optional monitor photodiode
- RoHS compliance

SPECIFICATIONS

Test conditions: CW operation, chip temperature 25°C, the case is mounted on room temperature heatsink

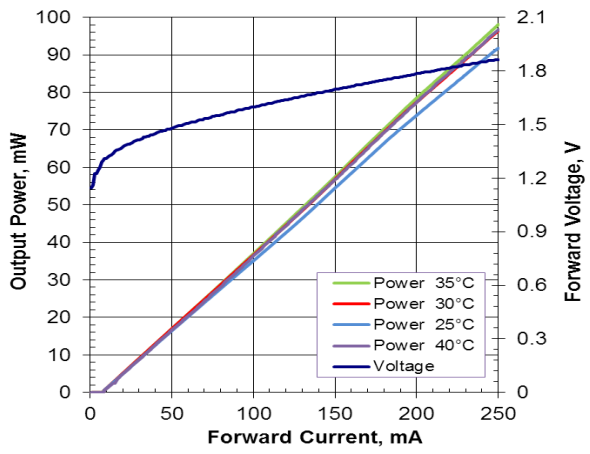
Parameters	Symb.	Min.	Typ.	Max.	Unit
Operating Power	Pout	50			mW
Operating Current	Iop		150	200	mA
Operating Voltage	Vop		1.7	3.5	V
Kink-free output power*		1.1×Pout	1.3×Pout		mW
Central wavelength	λ	1020		1120	nm
Linewidth at Pout	Δλ			5	MHz
Wavelength temperature tunability	Δλ/ΔT		90	110	pm/°C
Wavelength current tunability	Δλ/ΔI		4	6	pm/mA
Sidemode suppression ratio	SMSR	45			dB
Threshold current	Ith		25	50	mA
Polarization Extinction Ratio	PER	15			dB

* ΔP/ΔI > 0 (ΔI=1mA)

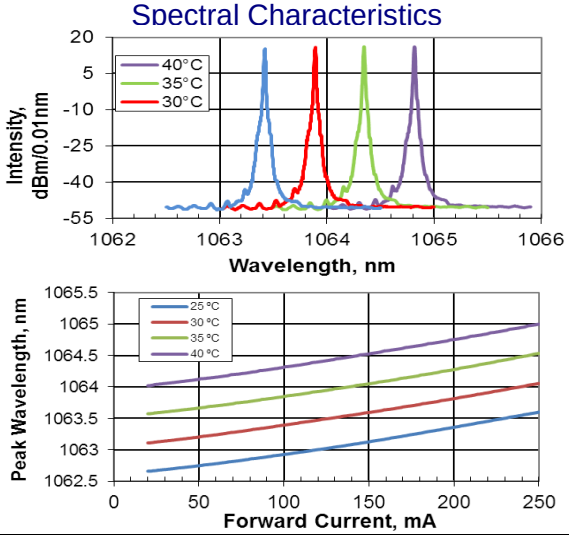
TYPICAL PERFORMANCE for reference only*

Test conditions: CW operation, the case is mounted on room temperature heatsink

Light-Current-Voltage Characteristics



Spectral Characteristics



* Performance is given for the DFB-1064-PM-50 device.

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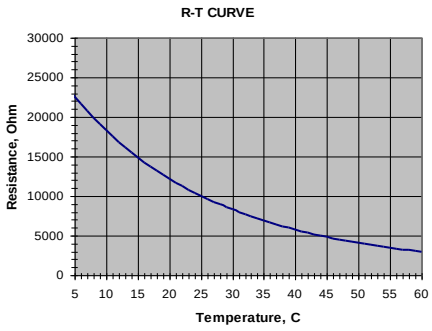
ABSOLUTE MAXIMUM RATINGS

Parameters	Min.	Max.	Unit
Laser Diode reverse voltage	-	2	V
Laser Diode CW forward current	-	Iop+50	mA
Thermo Electric Cooler current	-	3	A
Thermo Electric Cooler voltage	-	4	V
Fiber bend radius	-	3	cm
Chip operating temperature range	5	45	°C
Case operating temperature range	0	70	°C
Storage temperature range	-40	85	°C

THERMISTOR SPECIFICATION

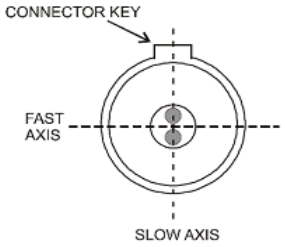
Parameters	Value	Unit
Thermistor type	NTC	-
Resistance @25°C	10 ± 0.1	kOhm
Beta 0-50°C	3375±1%	K



FIBER SPECIFICATION

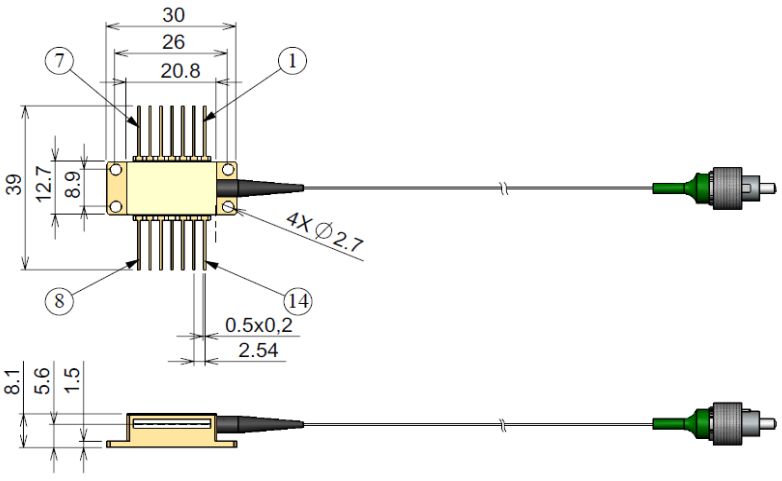
Parameters	HI1060	PM980	Unit
Numerical aperture (Typical)	0.14	0.12	
Cutoff wavelength	920±50	900±70	nm
Mode-field diameter (@1060nm)	6.2±0.3	6.6±0.3	μm
Cladding diameter	125±1	125±1	μm
Coating diameter	245±15	245±15	μm
Length	1.0 ± 0.1	1.0 ± 0.1	m
Connector	FC/APC (narrow key)		

Connector alignment to the PANDA fiber



The output light is polarized along the slow axis of PM fiber.

DIMENSIONS (in mm)



Pin identification:

1	TEC "+"
2	Thermistor
3	Monitor PD anode (optional)
4	Monitor PD cathode (optional)
5	Thermistor
6	-
7	-
8	-
9	-
10	Laser Diode anode "+"
11	Laser Diode cathode "-"
12	-
13	Case
14	TEC "-"

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SAFETY AND OPERATING INSTRUCTIONS

The light emitted from this device is invisible and can be harmful to the human eye. Avoid looking directly into the fiber connector when the device is in operation. Proper laser safety eyewear must be worn during operation with open connector.

Absolute Maximum Ratings may be applied to the Laser Diode for short period of time only. Exposure to maximum ratings for extended period of time or exposure to more than one maximum rating may cause damage or affect the reliability of the device. Operating the Laser Diode outside of its maximum ratings may cause device failure or a safety hazard. Power supplies used with the component must be employed such that the maximum forward current cannot be exceeded.

A proper heatsink for the Laser Diode on thermal radiator is required. The Laser Diode must be mounted on radiator with 4 screws (bolt down in X-style fashion with initial torque set to 0.075Nm and final X-style bolt down at 0.15Nm) or with clamps. The deviation from flatness of radiator surface must be less than 0.05mm. It's recommended using of Indium foil or thermal conductive and soft material between bottom of the case and heatsink for thermal interface. It's undesirable to use thermal grease for this.

Avoid back reflection to the Laser Diode. It may give impact on the device performance in aspects of spectrum and power stability. It also may cause fatal laser diode facet damage. Using of optical isolators is highly recommended to block back reflection.

Do not pull the fiber. Do not bend a fiber with a radius smaller than 3 cm. Operate the laser module with clean fiber connector only. Periodically check and clean the connector if necessary. To clean the connector use a clean-room compatible tissue only, put some Isopropyl alcohol onto it and carefully clean the facet of the connector, or use special fiber cleaning tools. Perform cleaning only with the laser current switched off.

Electrostatic discharge can lead to device failure. Take necessary precautions to prevent ESD.

Example of Part Number Identification

DFB-1064-PM-50 -> 50mW output power at wavelength 1064nm, PM-980 fiber

DFB-1064-HI-50 -> 50mW output power at wavelength 1064nm, HI-1060 fiber

DFB-1030-PM-50 -> 50mW output power at wavelength 1030nm, PM-980 fiber

NOTE: Innolume product specifications are subject to change without notice

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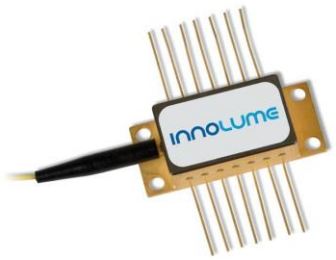
DFB-11XX-YY-30

Fiber Coupled Distributed-Feedback Laser Diode with Integrated Optical Amplifier



Features:

- 30mW output power ex-single mode fiber
- Available wavelength range 1160-1200nm
- Mode-hop free continious tuning
- Proprietary mirror coating technology enabling high reliability
- PM980 or HI1060 fiber
- Individual burn-in and thermal cycling screening
- Optional monitor photodiode
- RoHS compliance

SPECIFICATIONS

Test conditions: CW operation, chip temperature 25°C, the case is mounted on room temperature heatsink

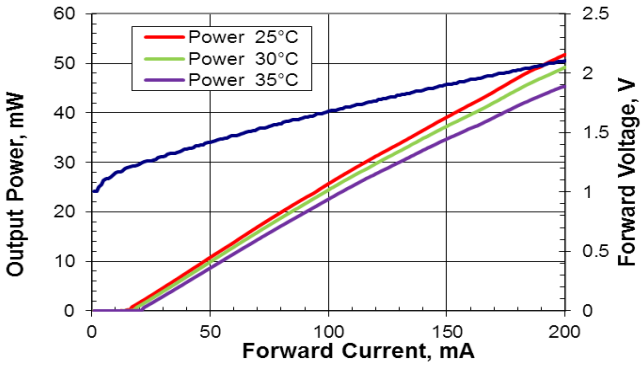
Parameters	Symb.	Min.	Typ.	Max.	Unit
Operating Power	Pout	30			mW
Operating Current	Iop		130	200	mA
Operating Voltage	Vop		1.8	3.5	V
Kink-free output power*		1.1×Pout	1.3×Pout		mW
Central wavelength	λ	1160		1200	nm
Linewidth at Pout	Δλ			5	MHz
Wavelength temperature tunability	Δλ/ΔT		100	115	pm/°C
Wavelength current tunability	Δλ/ΔI		4	6	pm/mA
Sidemode suppression ratio	SMSR	40			dB
Threshold current	Ith		35	70	mA
Polarization Extinction Ratio	PER	15			dB

* ΔP/ΔI > 0 (ΔI=1mA)

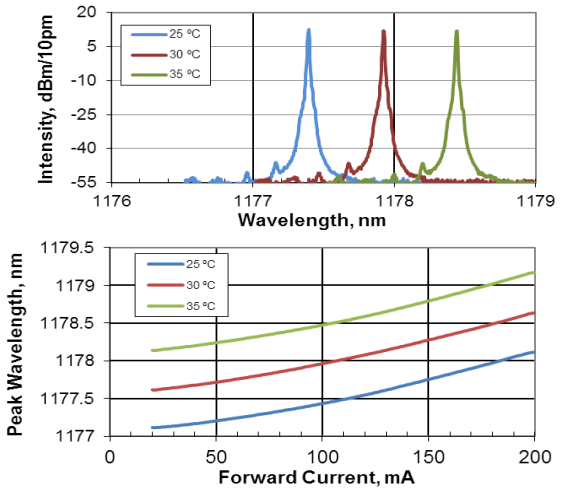
TYPICAL PERFORMANCE for reference only*

Test conditions: CW operation, the case is mounted on room temperature heatsink

Light-Current-Voltage Characteristics



Spectral Characteristics



* Performance is given for the DFB-1178-PM-30 device.

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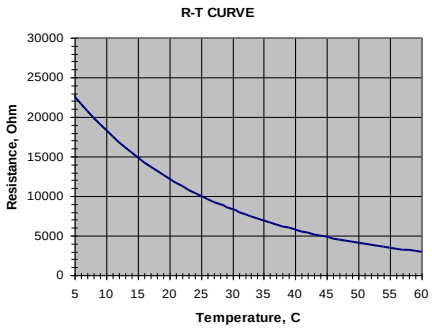
ABSOLUTE MAXIMUM RATINGS

Parameters	Min.	Max.	Unit
Laser Diode reverse voltage	-	2	V
Laser Diode CW forward current	-	Iop+50	mA
Thermo Electric Cooler current	-	3	A
Thermo Electric Cooler voltage	-	4	V
Fiber bend radius	-	3	cm
Chip operating temperature range	5	45	°C
Case operating temperature range	0	70	°C
Storage temperature range	-40	85	°C

THERMISTOR SPECIFICATION

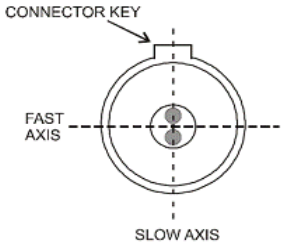
Parameters	Value	Unit
Thermistor type	NTC	-
Resistance @25°C	10 ± 0.1	kOhm
Beta 0-50°C	3375±1%	K



FIBER SPECIFICATION

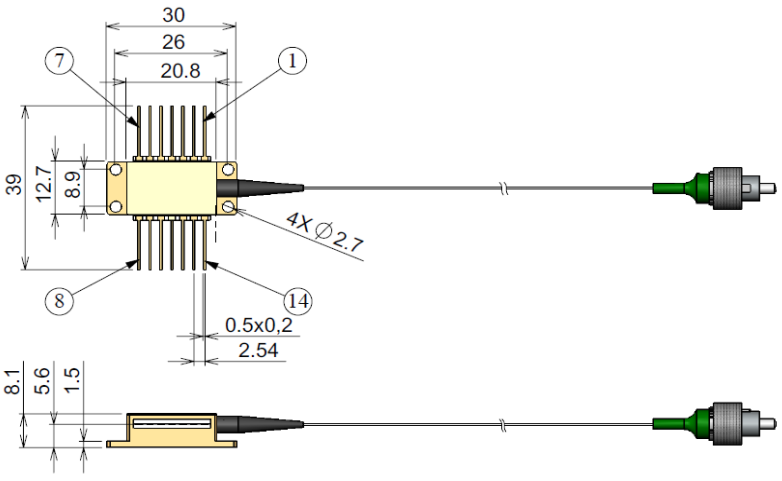
Parameters	HI1060	PM980	Unit
Numerical aperture (Typical)	0.14	0.12	
Cutoff wavelength	920±50	900±70	nm
Mode-field diameter (@1060nm)	6.2±0.3	6.6±0.3	μm
Cladding diameter	125±1	125±1	μm
Coating diameter	245±15	245±15	μm
Length	1.0 ± 0.1	1.0 ± 0.1	m
Connector	FC/APC (narrow key)		

Connector alignment to the PANDA fiber



The output light is polarized along the slow axis of PM fiber.

DIMENSIONS (in mm)



Pin identification:

1	TEC "+"
2	Thermistor
3	Monitor PD anode (optional)
4	Monitor PD cathode (optional)
5	Thermistor
6	-
7	-
8	-
9	-
10	Laser Diode anode "+"
11	Laser Diode cathode "-"
12	-
13	Case
14	TEC "-"

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SAFETY AND OPERATING INSTRUCTIONS

The light emitted from this device is invisible and can be harmful to the human eye. Avoid looking directly into the fiber connector when the device is in operation. Proper laser safety eyewear must be worn during operation with open connector.

Absolute Maximum Ratings may be applied to the Laser Diode for short period of time only. Exposure to maximum ratings for extended period of time or exposure to more than one maximum rating may cause damage or affect the reliability of the device. Operating the Laser Diode outside of its maximum ratings may cause device failure or a safety hazard. Power supplies used with the component must be employed such that the maximum forward current cannot be exceeded.

A proper heatsink for the Laser Diode on thermal radiator is required. The Laser Diode must be mounted on radiator with 4 screws (bolt down in X-style fashion with initial torque set to 0.075Nm and final X-style bolt down at 0.15Nm) or with clamps. The deviation from flatness of radiator surface must be less than 0.05mm. It's recommended using of Indium foil or thermal conductive and soft material between bottom of the case and heatsink for thermal interface. It's undesirable to use thermal grease for this.

Avoid back reflection to the Laser Diode. It may give impact on the device performance in aspects of spectrum and power stability. It also may cause fatal laser diode facet damage. Using of optical isolators is highly recommended to block back reflection.

Do not pull the fiber. Do not bend a fiber with a radius smaller than 3 cm. Operate the laser module with clean fiber connector only. Periodically check and clean the connector if necessary. To clean the connector use a clean-room compatible tissue only, put some Isopropyl alcohol onto it and carefully clean the facet of the connector, or use special fiber cleaning tools. Perform cleaning only with the laser current switched off.

Electrostatic discharge can lead to device failure. Take necessary precautions to prevent ESD.

Example of Part Number Identification

DFB-1064-PM-50 -> 50mW output power at wavelength 1064nm, PM-980 fiber

DFB-1064-HI-50 -> 50mW output power at wavelength 1064nm, HI-1060 fiber

DFB-1030-PM-50 -> 50mW output power at wavelength 1030nm, PM-980 fiber

NOTE: Innolume product specifications are subject to change without notice

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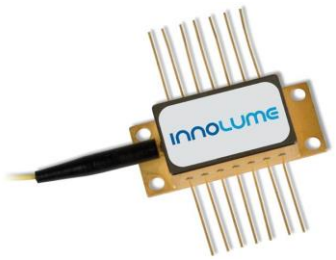
DFB-12XX-YY-30

Fiber Coupled Distributed-Feedback Laser Diode with Integrated Optical Amplifier



Features:

- 30mW output power ex-single mode fiber
- Available wavelength range 1200-1280nm
- Mode-hop free continious tuning
- Proprietary mirror coating technology enabling high reliability
- PM980 or HI1060 fiber
- Individual burn-in and thermal cycling screening
- Optional monitor photodiode
- RoHS compliance

SPECIFICATIONS

Test conditions: CW operation, chip temperature 25°C, the case is mounted on room temperature heatsink

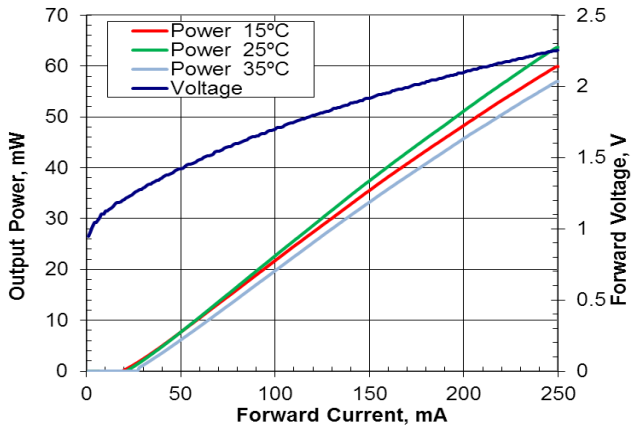
Parameters	Symb.	Min.	Typ.	Max.	Unit
Operating Power	Pout	30			mW
Operating Current	Iop		130	200	mA
Operating Voltage	Vop		1.8	3.5	V
Kink-free output power*		1.1×Pout	1.3×Pout		mW
Central wavelength	λ	1200		1280	nm
Linewidth at Pout	Δλ			5	MHz
Wavelength temperature tunability	Δλ/ΔT		100	115	pm/°C
Wavelength current tunability	Δλ/ΔI		4	6	pm/mA
Sidemode suppression ratio	SMSR	40			dB
Threshold current	Ith		35	70	mA
Polarization Extinction Ratio	PER	15			dB

* ΔP/ΔI > 0 (ΔI=1mA)

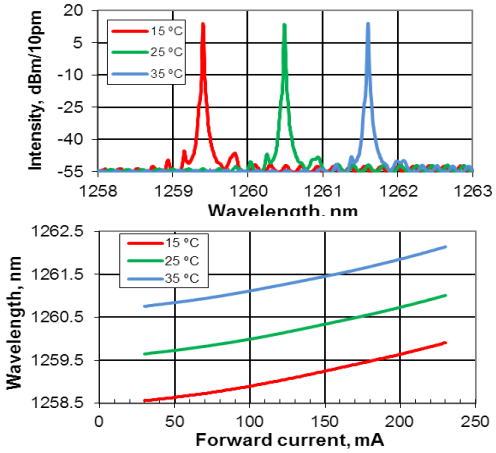
TYPICAL PERFORMANCE for reference only*

Test conditions: CW operation, the case is mounted on room temperature heatsink

Light-Current-Voltage Characteristics



Spectral Characteristics



* Performance is given for the DFB-1260-PM-30 device.

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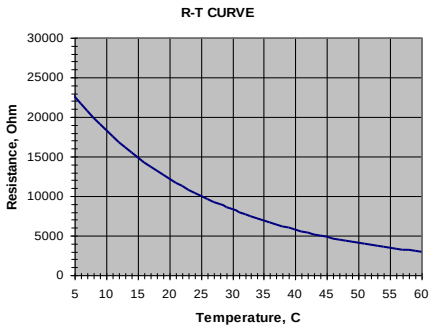
ABSOLUTE MAXIMUM RATINGS

Parameters	Min.	Max.	Unit
Laser Diode reverse voltage	-	2	V
Laser Diode CW forward current	-	Iop+50	mA
Thermo Electric Cooler current	-	3	A
Thermo Electric Cooler voltage	-	4	V
Fiber bend radius	-	3	cm
Chip operating temperature range	5	45	°C
Case operating temperature range	0	70	°C
Storage temperature range	-40	85	°C

THERMISTOR SPECIFICATION

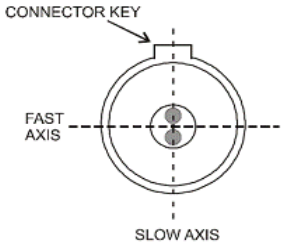
Parameters	Value	Unit
Thermistor type	NTC	-
Resistance @25°C	10 ± 0.1	kOhm
Beta 0-50°C	3375±1%	K



FIBER SPECIFICATION

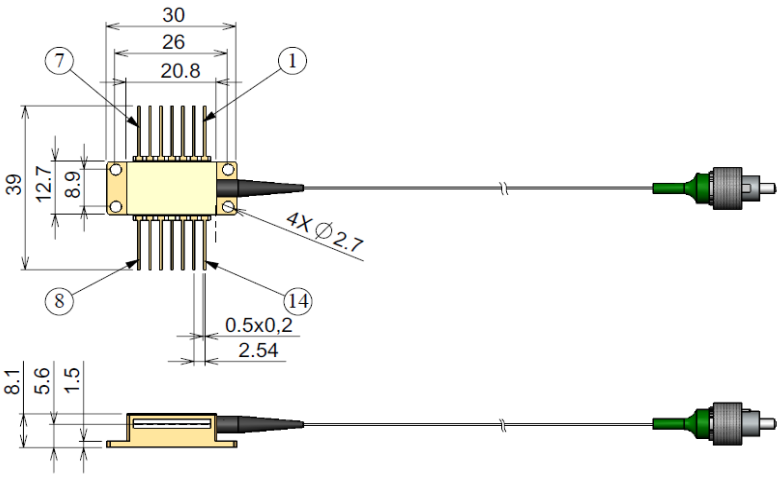
Parameters	HI1060	PM980	Unit
Numerical aperture (Typical)	0.14	0.12	
Cutoff wavelength	920±50	900±70	nm
Mode-field diameter (@1060nm)	6.2±0.3	6.6±0.3	μm
Cladding diameter	125±1	125±1	μm
Coating diameter	245±15	245±15	μm
Length	1.0 ± 0.1	1.0 ± 0.1	m
Connector	FC/APC (narrow key)		

Connector alignment to the PANDA fiber



The output light is polarized along the slow axis of PM fiber.

DIMENSIONS (in mm)



Pin identification:

1	TEC "+"
2	Thermistor
3	Monitor PD anode (optional)
4	Monitor PD cathode (optional)
5	Thermistor
6	-
7	-
8	-
9	-
10	Laser Diode anode "+"
11	Laser Diode cathode "-"
12	-
13	Case
14	TEC "-"

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Electrostatic discharge can lead to device failure. Take necessary precautions to prevent ESD.

Example of Part Number Identification

DFB-1064-PM-50 -> 50mW output power at wavelength 1064nm, PM-980 fiber

DFB-1064-HI-50 -> 50mW output power at wavelength 1064nm, HI-1060 fiber

DFB-1030-PM-50 -> 50mW output power at wavelength 1030nm, PM-980 fiber

NOTE: Innolume product specifications are subject to change without notice

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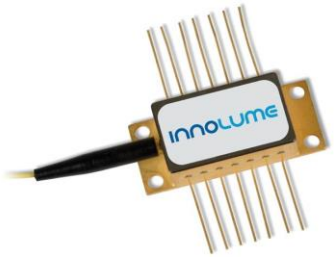
DFB-13XX-YY-30

Fiber Coupled Distributed-Feedback Laser Diode



Features:

- 30mW output power ex-single mode fiber
- Available wavelength range 1280-1325nm
- Mode-hop free continious tuning
- Proprietary mirror coating technology enabling high reliability
- PM1300 or SMF28 fiber
- Individual burn-in and thermal cycling screening
- Optional monitor photodiode
- RoHS compliance

SPECIFICATIONS

Test conditions: CW operation, chip temperature 25°C, the case is mounted on room temperature heatsink

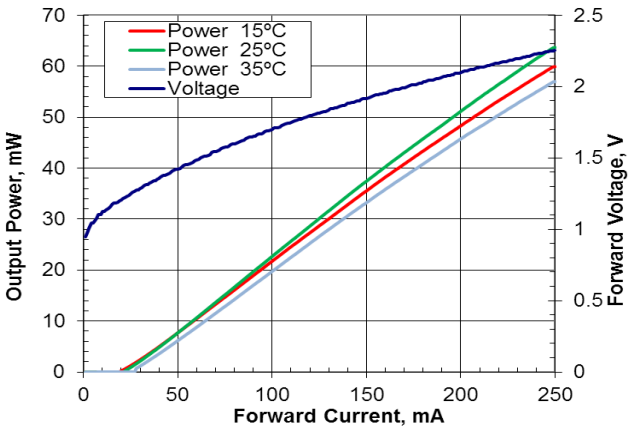
Parameters	Symb.	Min.	Typ.	Max.	Unit
Operating Power	Pout	30			mW
Operating Current	Iop		150	200	mA
Operating Voltage	Vop		2	3.5	V
Kink-free output power*		1.1×Pout	1.3×Pout		mW
Central wavelength	λ	1280		1325	nm
Linewidth at Pout	Δλ			5	MHz
Wavelength temperature tunability	Δλ/ΔT		100	130	pm/°C
Wavelength current tunability	Δλ/ΔI		6	8	pm/mA
Sidemode suppression ratio	SMSR	40			dB
Threshold current	Ith		35	70	mA
Polarization Extinction Ratio	PER	15			dB

* ΔP/ΔI > 0 (ΔI=1mA)

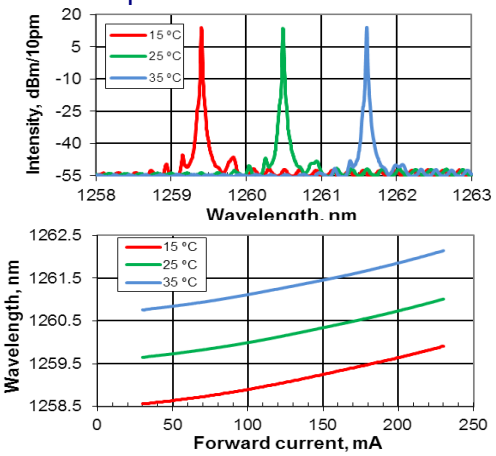
TYPICAL PERFORMANCE for reference only*

Test conditions: CW operation, the case is mounted on room temperature heatsink

Light-Current-Voltage Characteristics



Spectral Characteristics



* Performance is given for the DFB-1260-PM-30 device.

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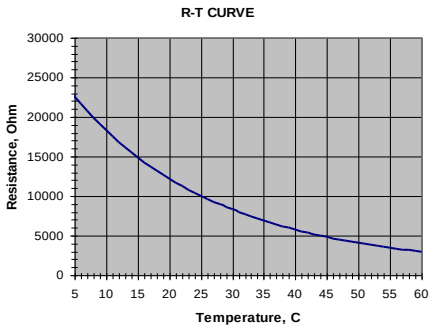
ABSOLUTE MAXIMUM RATINGS

Parameters	Min.	Max.	Unit
Laser Diode reverse voltage	-	2	V
Laser Diode CW forward current	-	Iop+50	mA
Thermo Electric Cooler current	-	3	A
Thermo Electric Cooler voltage	-	4	V
Fiber bend radius	-	3	cm
Chip operating temperature range	5	45	°C
Case operating temperature range	0	70	°C
Storage temperature range	-40	85	°C

THERMISTOR SPECIFICATION

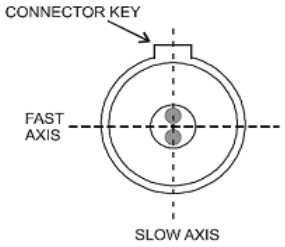
Parameters	Value	Unit
Thermistor type	NTC	-
Resistance @25°C	10 ± 0.1	kOhm
Beta 0-50°C	3375±1%	K



FIBER SPECIFICATION

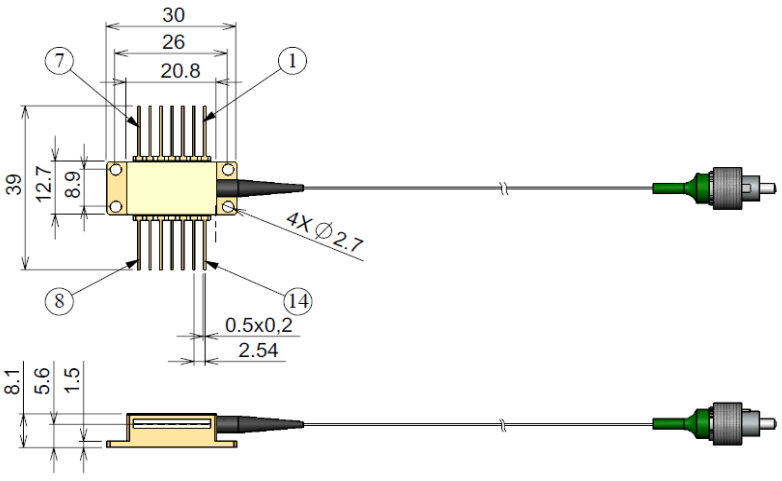
Parameters	PM1300	SMF-28	Unit
Numerical aperture (Typical)	0.12	0.14	
Cutoff wavelength	1260	1260	nm
Mode-field diameter (@1060nm)	9.2±0.4	9.0±0.5	μm
Cladding diameter	125±1	125±1	μm
Coating diameter	245±15	245±15	μm
Length	1.0 ± 0.1	1.0 ± 0.1	m
Connector	FC/APC (narrow key)		

Connector alignment to the PANDA fiber



The output light is polarized along the slow axis of PM fiber.

DIMENSIONS (in mm)



Pin identification:

1	TEC "+"
2	Thermistor
3	Monitor PD anode (optional)
4	Monitor PD cathode (optional)
5	Thermistor
6	-
7	-
8	-
9	-
10	Laser Diode anode "+"
11	Laser Diode cathode "-"
12	-
13	Case
14	TEC "-"

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SAFETY AND OPERATING INSTRUCTIONS

The light emitted from this device is invisible and can be harmful to the human eye. Avoid looking directly into the fiber connector when the device is in operation. Proper laser safety eyewear must be worn during operation with open connector.

Absolute Maximum Ratings may be applied to the Laser Diode for short period of time only. Exposure to maximum ratings for extended period of time or exposure to more than one maximum rating may cause damage or affect the reliability of the device. Operating the Laser Diode outside of its maximum ratings may cause device failure or a safety hazard. Power supplies used with the component must be employed such that the maximum forward current cannot be exceeded.

A proper heatsink for the Laser Diode on thermal radiator is required. The Laser Diode must be mounted on radiator with 4 screws (bolt down in X-style fashion with initial torque set to 0.075Nm and final X-style bolt down at 0.15Nm) or with clamps. The deviation from flatness of radiator surface must be less than 0.05mm. It's recommended using of Indium foil or thermal conductive and soft material between bottom of the case and heatsink for thermal interface. It's undesirable to use thermal grease for this.

Avoid back reflection to the Laser Diode. It may give impact on the device performance in aspects of spectrum and power stability. It also may cause fatal laser diode facet damage. Using of optical isolators is highly recommended to block back reflection.

Do not pull the fiber. Do not bend a fiber with a radius smaller than 3 cm. Operate the laser module with clean fiber connector only. Periodically check and clean the connector if necessary. To clean the connector use a clean-room compatible tissue only, put some Isopropyl alcohol onto it and carefully clean the facet of the connector, or use special fiber cleaning tools. Perform cleaning only with the laser current switched off.

Electrostatic discharge can lead to device failure. Take necessary precautions to prevent ESD.

Example of Part Number Identification

DFB-1260-HI-20 -> 20mW output power at wavelength 1260nm, HI-1060 fiber

DFB-1260-PM-20 -> 20mW output power at wavelength 1260nm, PM-980 fiber

DFB-1310-PM-60 -> 60mW output power at central wavelength 1310nm, PM-980 fiber

NOTE: Innolume product specifications are subject to change without notice

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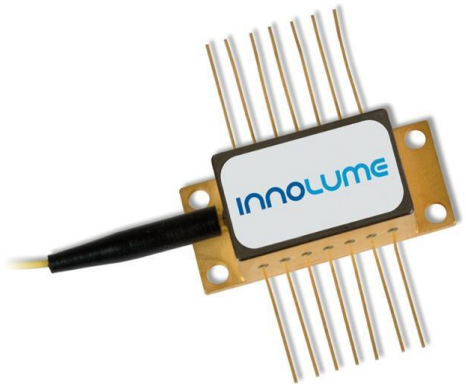
LD-1064-DBR-150

Fiber Coupled Distributed Feedback Laser



Features:

- 150mW output power ex-single mode fiber
- Highly reliable Au/Sn-technology
- Polarization maintaining PM980 fiber
- Optional: external fiber isolator upon request
- Optional: monitor photodiode for power control

Application:

- Seeding
- Gas sensing
- Instrumentation/measurement equipment

Specification DATE: 27th January 2015

SPECIFICATIONS

Test conditions: CW operation, chip temperature 25°C, the module is mounted on a room temperature heatsink.

Parameters	Symb.	Min.	Typ.	Max.	Unit
Output power	P_{out}		150		mW
Central Wavelength	λ_P	1062	1064	1066	nm
*Spectral Width at P_{out}	$\Delta\lambda$		3		MHz
Wavelength Thermal Coefficient	$\Delta\lambda/\Delta T$		80	100	pm/°C
Wavelength Current Coefficient	$\Delta\lambda/\Delta I$		3	5	pm/mA
Sidemode Suppression Ratio at P_{out}	SMSR	35	40		dB
Threshold current	I_{th}		35	50	mA
Operating current at P_{out}	I_{op}		300	380	mA
Forward voltage at P_{out}	V_f		1.9	2.1	V
Polarization Extinction Ratio	PER	15	20		dB
Recommended operating chip temperature (thermistor readings)	T_{op}	15	25	40	°C

* Estimated using self-heterodyning method with 9km delay line

ABSOLUTE MAXIMUM RATINGS

Parameters	Min.	Max.	Unit
Laser Diode reverse voltage		1	V
Laser Diode CW forward current		500	mA
Thermo Electric Cooler current		3	A
Thermo Electric Cooler voltage		4	V
Storage temperature range (in original sealed pack)	5	80	°C
Lead soldering temperature (max. 5 sec.)		250	°C
Case operating temperature range	10	50	°C

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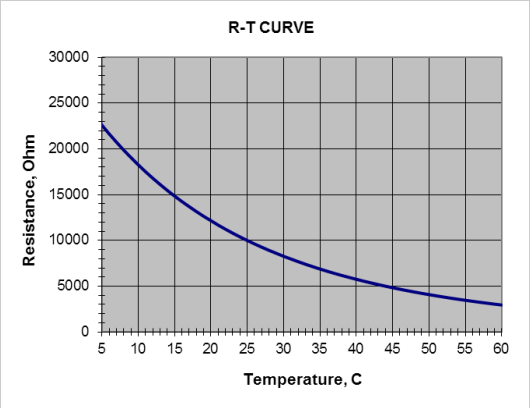
THERMISTOR SPECIFICATION

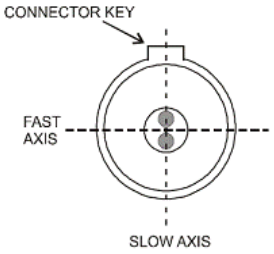
Parameters	Value	Unit
Thermistor type	NTC	
Resistance @25°C	10 ± 0.1	kOhm
Beta 0-50°C	3375	K



FIBER SPECIFICATION

Parameters	PANDA PM980	Unit
Numerical aperture (Typical)	0.14	
Cutoff wavelength	920±50	nm
Mode-field diameter (@1060nm)	6.6±0.3	μm
Cladding diameter	125±1	μm
Coating diameter	245±15	μm
Core-to-cladding offset	≤0.5	μm
Length	1.5 ± 0.2	m
Optical isolation*	30	dB
Connector	FC/APC connector or bare cleaved end	

Connector alignment to PANDA Fiber

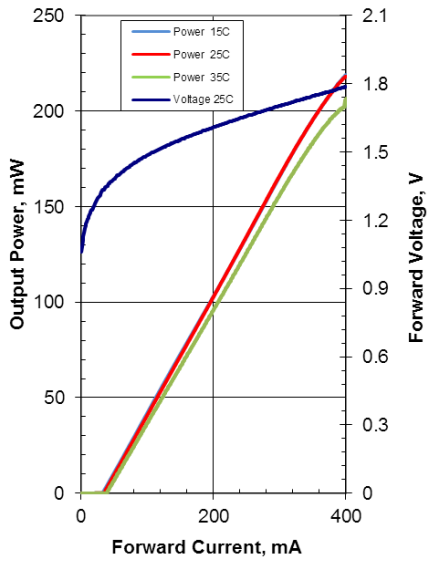


* For spliced optical isolator option

TYPICAL PERFORMANCE for reference only

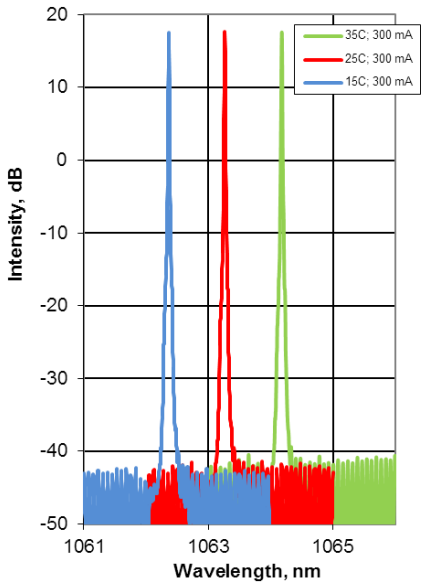
Test conditions: CW operation, module is mounted on room temperature heatsink

Light-Current-Voltage Characteristics

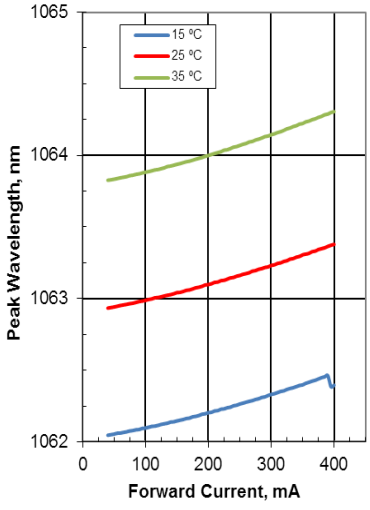


Lasing spectra

10pm resolution at -3dB, 25°C



Wavelength Tuning



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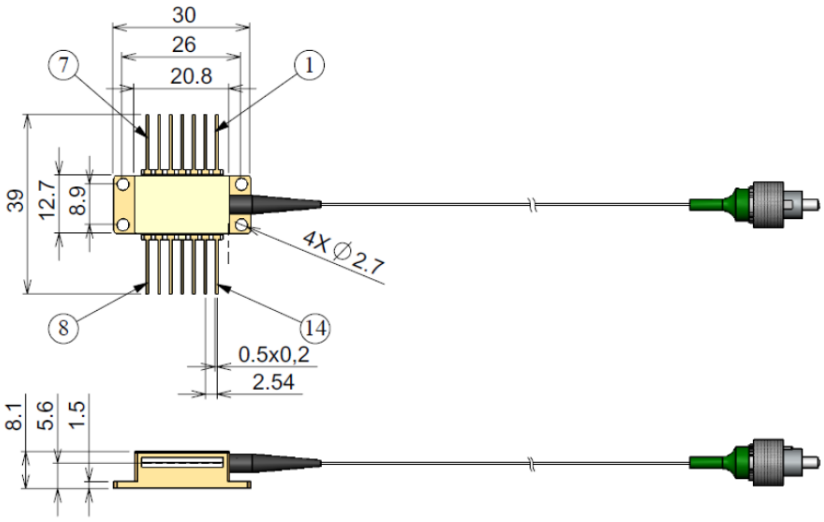
DIMENSIONS (All sizes are given in mm)



Pin identification:

1. TEC "+"
2. Thermistor
3. Monitor PD anode (optional)
4. Monitor PD cathode (optional)
5. Thermistor
6.
7.
8.
9.
10. Laser Diode anode "+"
11. Laser Diode cathode "-"
12.
13. Case
14. TEC "-"

SAFETY AND OPERATING INSTRUCTIONS

The laser light emitted from this device is invisible and will be harmful to the human eye. Avoid looking directly into the output fiber or into the collimated beam along its optical axis when the device is in operation. Proper laser safety eyewear must be worn during operation.

Operating the laser diode outside of its maximum ratings may cause device failure or a safety hazard. Power supplies used with the component must be employed such that the maximum forward current cannot be exceeded. A proper heatsink for the laser diode module on thermal radiator is required. The module must be mounted on radiator with screws (bolt down in X-style fashion with initial torque set to 0.075Nm and final X-style bolt down at 0.15Nm) or clamps. The deviation from flatness of radiator surface must be less than 0.05mm. It's recommended using of In-foil or similar between bottom of the module and heatsink for thermal interface.

Carefully handle the fragile fiber, do not apply any stress, do not pull the fiber, do not bend fiber with a radius smaller than 3cm. Operate the laser module with clean fiber connector only. Periodically check and clean the connector if necessary. To clean the connector use suitable fiber cleaning tools (e.g. special cleaning tissue for optics). Perform cleaning only while the laser is switched off. Protect the fiber connector with protection cap while it's unplugged.

ESD PROTECTION – Electrostatic discharge is the primary cause of unexpected Laser Diode failure. Take extreme precaution to prevent ESD. Use wrist straps, grounded work surfaces and rigorous antistatic techniques when handling laser diodes.

NOTE: Innolume product specifications are subject to change without notice.

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DFB-1064-TO-250

High Power Diode Laser in 9mm TO-can header – 250mW @ 1064nm

Features:

- 250mW output power
- Highly reliable Au/Sn-technology
- Proprietary mirror coating technology enabling high reliability
- 100 hours burn-in test passed
- Optional: monitor photodiode

Application:

- Seeding
- Gas sensing
- Instrumentation/measurement equipment

Specification

DATE: 29th Jan 2015

SPECIFICATIONS

Test conditions: CW operation, chip temperature 25°C, the module is mounted on room temperature heatsink.

Parameters	Symb.	Min.	Typ.	Max.	Unit
Output power	P_{out}	250			mW
Peak wavelength at P_{out}	λ_P	1062	1064	1066	nm
Spectral Width at P_{out} [1]	$\Delta\lambda$		<3	5	MHz
Wavelength Thermal Coefficient	$\Delta\lambda/\Delta T$		90	120	pm/°C
Sidemode Suppression Ratio at P_{out}	SMSR	35	40		dB
Wavelength Current Coefficient	$\Delta\lambda/\Delta I$		2	5	pm/mA
Threshold current	I_{th}		35	50	mA
Operating current at P_{out}	I_{op}		300	400	mA
Forward voltage at P_{out}	V_f		1.7	1.9	V
Polarization Extinction Ratio	PER	15	20		dB
Divergence perpendicular to p-n junction (FWHM)	Θ_{FA}	25	30	38	deg.
Divergence parallel to p-n junction (FWHM)	Θ_{FA}	4	6	9	deg.

[1] Extracted from self-heterodyning response with 9km delay line

ABSOLUTE MAXIMUM RATINGS

Parameters	Min.	Max.	Unit
Laser Diode reverse voltage		1	V
Laser Diode CW forward current		500	mA
Storage temperature range (in original sealed pack)	-40	80	°C
Lead soldering temperature (max. 5 sec.)		250 (5 sec.)	°C
Operating temperature range	15	50	°C

NOTE: Innolume product specifications are subject to change without notice.

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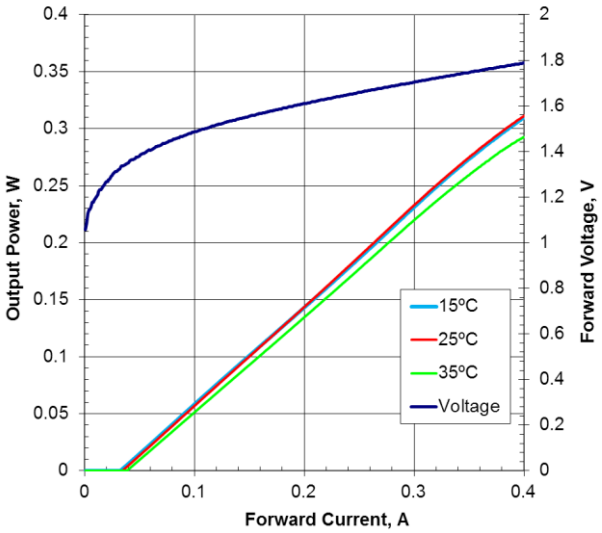
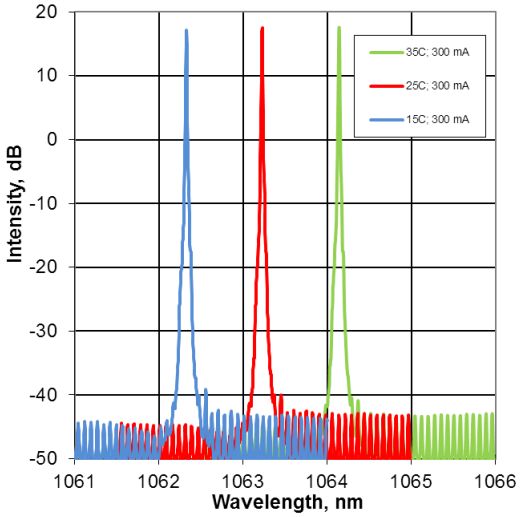
TYPICAL PERFORMANCE for reference only.

Test conditions: CW operation, the TO-can is mounted on room temperature heatsink.

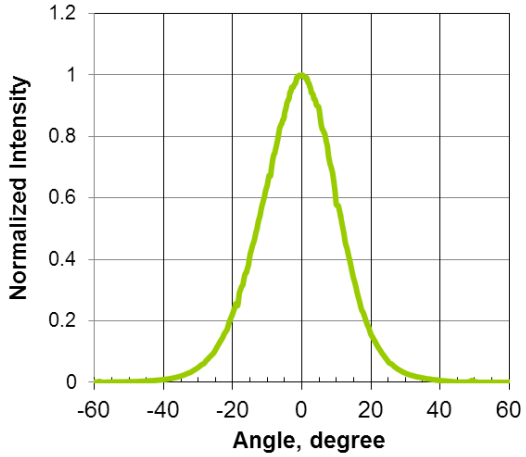
Light-Current-Voltage Characteristics



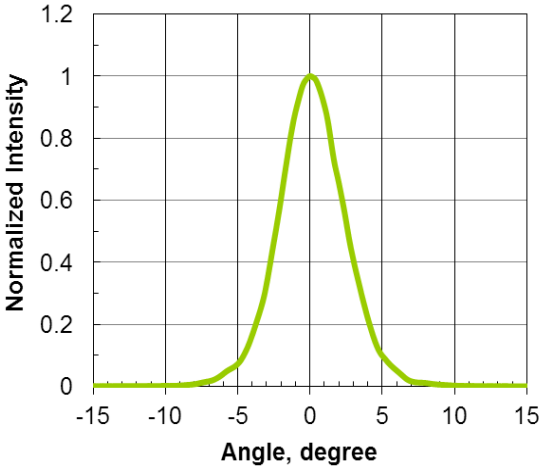
Output Spectra at operating current (resolution 10pm)



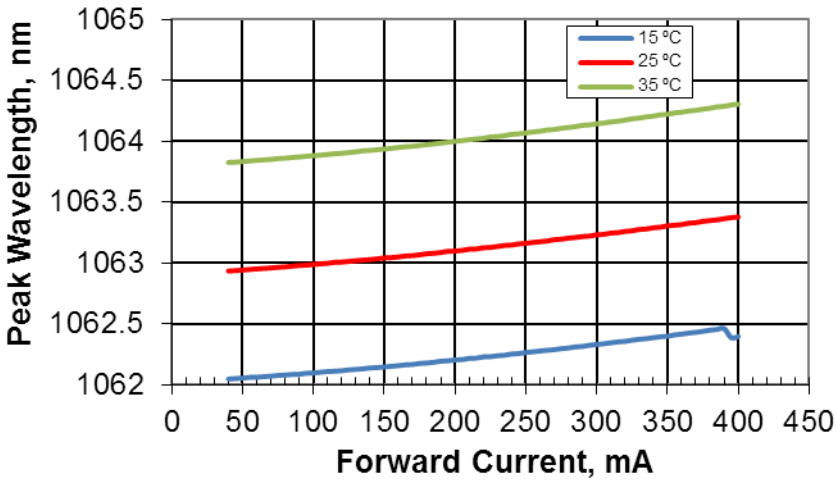
Fast Axis Far Field at operating current, 25°C



Slow Axis Far Field at operating current, 25°C



Wavelength vs. Current and Temperature



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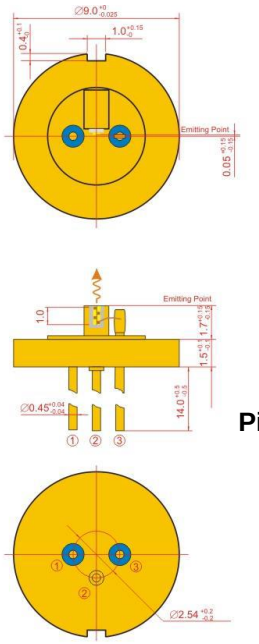
CHIP VISUAL ACCEPTANCE CRITERIA

Top view: no indentations deeper 30um on cleaved edges, no scratches or indentations on mesa
Front facet view: no particles or defects of coating in 10-um area around mesa

DIMENSIONS (All sizes are given in mm)



Pins connection

SAFETY AND OPERATING INSTRUCTIONS

The laser light emitted from this device is invisible and can be dangerous to a human eye. Avoid looking directly into the fiber output or into the collimated beam along its optical axis when the device is in operation. Proper laser safety eyewear must be worn during operation.

Absolute Maximum Ratings may be applied to the device for short period of time only. Exposure to maximum ratings for extended period of time or exposure above one or more max ratings may cause damage or affect the reliability of the device.
Operating the product outside of its maximum ratings may cause device failure or a safety hazard. Power supplies used with the device must be employed such that the maximum peak optical power cannot be exceeded. A proper heatsink for the device on thermal radiator is required, sufficient heat dissipation and thermal conductance to the heatsink must be ensured.

The device is an open-heatsink laser diode; it may be operated in cleanroom atmosphere or dust-protected housing only. Operating temperature and relative humidity must be controlled to avoid water condensation on the laser facets. Any contamination or contact of the laser facet must be avoided.

ESD PROTECTION – Electrostatic discharge is the primary cause of unexpected product failure. Take extreme precaution to prevent ESD. Use wrist straps, grounded work surfaces and rigorous antistatic techniques when handling the product.

NOTE: Innolume product specifications are subject to change without notice.