PLD-455-MF271-970-CHL 550 W

Multi-mode Fiber-coupled Packaged Diodes

FEATURES

- 970 nm Center Wavelength
- >500 W Output Power
- >50% typical wallplug efficiency
- Robust Compact Package
- Wavelength Stabilization and Dichroic Options
- 165 µm Core Fiber Diameter

APPLICATIONS

- Direct Diode Lasers
- Laser Pumping
- Material Processing
- Graphic Arts / Printing
- Medical & Dental
- Illumination
- Photovoltaics

PLD-455-MF271-970-CHL fiber-coupled packaged diodes provide 550 W of output power at 30 Amps. The PLD-455 features a 165 µm fiber core diameter and a 970 nm center wavelength. Wavelength stabilization and dichroic options are available.

IPG'S best-in-class diode technology offers an ideal combination of power, reliability and form factor. At IPG, we manufacture to rigorous telecom-grade standards in the world's largest high power diode fab. Each wafer is individually qualified, which sets IPG apart from alternative industrial pump products using short-lived diode bars and bar-stack technologies. PLD-455 packaged diodes are the preferred solution for fiber amplifier and laser pumping, material processing and direct diode applications.

PLD-455-MF271-970-CHL 550 W

Multi-mode Fiber-coupled Packaged Diodes

Optical and Electrical Characteristics*	
Center Wavelength**, nm	970
Center Wavelength Tolerance, nm	+/- 5
Minimum Output Power @ 30 A, W	550
Spectral Width (FWHM), nm	<6
Efficiency, %	>50
Forward Voltage, V	Up to 37.5
Recommended Case Temperature, ºC	25
Wavelength Shift with Current (25-30 A), nm/A	0.55

*Performance data measured at 25ºC

Fiber Characteristics	
Fiber Core Diameter, µm	165
Fiber Cladding Diameter, µm	187
Fiber Buffer Diameter, µm	275
Beam Numerical Aperture (90% power)	<0.25
Fiber Length, m	2
Minimum Fiber Bend Radius, mm	35

Maximum Ratings	
Operating Current (I_{OP}), A	Up to 30
Reverse Voltage, V	7.5
Case Temperature, ºC	5 - 70
Storage Temperature, ºC	-20 to 60
Lead Soldering Temperature (10 s max) ºC	300
Relative Humidity, %	85

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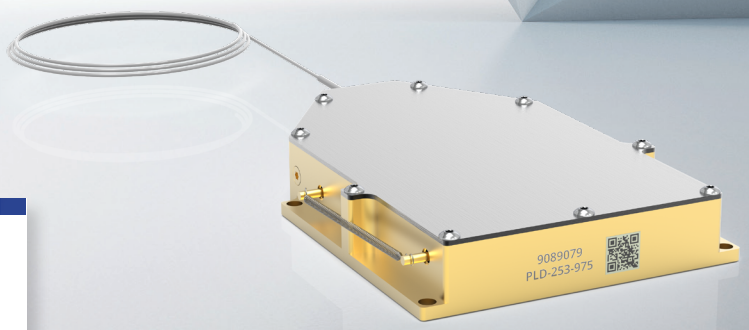
PLD-253-970-CHL, 200 W

Multi-mode Fiber-coupled Packaged Diodes



FEATURES

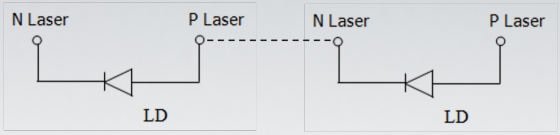
- 970 nm Center Wavelength
- Wavelength Stabilization and Dichroic Options
- 200 W Output Power
- 0.175 NA into 110 µm Fiber Core Diameter
- High Reliability
- Robust Compact Package

APPLICATIONS

- Amplifier Pumping
- Direct Diode Lasers
- Laser Pumping
- Material Processing
- Graphic Arts / Printing
- Medical & Dental
- Illumination
- Photovoltaics

PLD-253-970-CHL fiber-coupled packaged diodes provide up to 200 W of output power within 0.175 NA. PLD-253 diode features include a 110 µm fiber core diameter and 970 nm center wavelength. Wavelength stabilization and dichroic options are also available.

IPG best-in-class diode technology offers an ideal combination of power, reliability and form factor. We manufacture to rigorous telecom-grade standards in the world's largest high power diode fab. Each wafer is individually qualified, which sets IPG apart from alternative industrial pump products using short-lived diode bars and bar-stack technologies. PLD-253 packaged diodes are preferred for fiber amplifier and laser pumping, material processing and direct diode applications.



PLD-253-970-CHL, 200 W

Multi-mode Fiber-coupled Packaged Diodes

Optical and Electrical Characteristics*	PLD-253-970-CHL
Center Wavelength, nm	968.5
Center Wavelength Tolerance, nm	±5.5
Output Power, W (Typ./Min)	200/190
Wavelength Shift in Current Range 14 - 18 A, nm/A	0.55
Power Shift in Current Range 14 - 18 A, W/A	15.5
Spectral Width, nm	4±2
Threshold Current (I_{TH}), A	1.7
Operating Current (I_{OP}), A	14
Forward Voltage, V**	<27, connected in series
Recommended Case Temperature, ºC	25

* Typical performance data measured at 14 A, 25ºC
** 27 V maximum spec applies when diode banks are connected in electrical series. Customer may choose to operate each diode bank independently using separate drivers.

Fiber Characteristics	
Fiber Core Diameter, µm	110
Fiber Cladding Diameter, µm	125
Fiber Buffer Diameter, µm	230
Typ./Max Beam Numerical Aperture (90% power)	0.175/0.20
Fiber Length, m	1.9
Minimum Fiber Bend Radius, mm	30

Maximum Ratings	
Operating Current (I_{OP}), A	18
Reverse Voltage, V	2.5
Case Temperature, ºC	5 - 70
Storage Temperature, ºC	-20 to 60
Lead Soldering Temperature (10 s max) ºC	300
Relative Humidity, %	85

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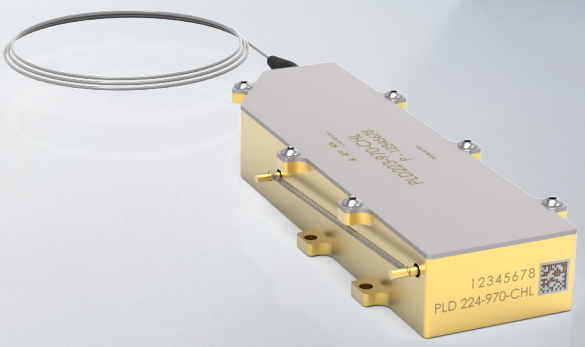
PLD-224-200-970-CHL, 180 W

Multi-mode Fiber-coupled Packaged Diodes



FEATURES

- 970 nm Center Wavelength
- Up to 180 W Output Power
- >50% Typical Wall-plug Efficiency
- Robust Compact Package
- Wavelength Stabilization and Dichroic Options
- 200 µm Core Fiber Diameter

APPLICATIONS

- Amplifier Pumping
- Direct Diode Lasers
- Laser Pumping
- Material Processing
- Graphic Arts / Printing
- Medical & Dental
- Illumination
- Photovoltaics

IPG Photonics **PLD-224-200-970-CHL** fiber-coupled packaged diodes provide 180 W of output power at 20 Amps. The PLD-224 features a 200 µm fiber core diameter and a 970 nm center wavelength. Wavelength stabilization and dichroic options are available.

IPG'S best-in-class diode technology offers an ideal combination of power, reliability and form factor. At IPG, we manufacture to rigorous telecom-grade standards in the world's largest high power diode fab. Each wafer is individually qualified, which sets IPG apart from alternative industrial pump products using short-lived diode bars and bar-stack technologies. PLD-224 packaged diodes are the preferred solution for fiber amplifier and laser pumping, material processing and direct diode applications.

PLD-224-200-970-CHL, 180 W

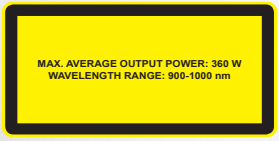
Multi-mode Fiber-coupled Packaged Diodes

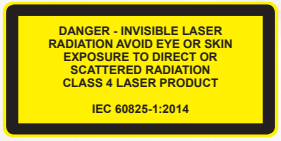
Optical and Electrical Characteristics*	
Center Wavelength, nm	970
Center Wavelength Tolerance, nm	+/- 5
Output Power, W	Up to 180
Spectral Width (FWHM), nm	<0.3
Slope Efficiency, W/A	9
Efficiency, %	>50
Threshold Current (I_{TH}), A	20
Operating Current (I_{OP}), A	Up to 30
Forward Voltage, V	<20
Recommended Case Temperature, ºC	25
Wavelength Shift with Temperature, nm/ºC	0.35

*Typical performance data measured at 20 A, 25ºC.

Fiber Characteristics	
Fiber Core Diameter, µm	200
Fiber Cladding Diameter, µm	227
Fiber Buffer Diameter, µm	900
Beam Numerical Aperture (90% power)	<0.2
Fiber Length, m	2
Minimum Fiber Bend Radius, mm	35

Maximum Ratings	
Operating Current (I_{OP}), A	30
Reverse Voltage, V	7.5
Case Temperature, ºC	5 - 70
Storage Temperature, ºC	-20 to 60
Lead Soldering Temperature (10 s max) ºC	300
Relative Humidity, %	85





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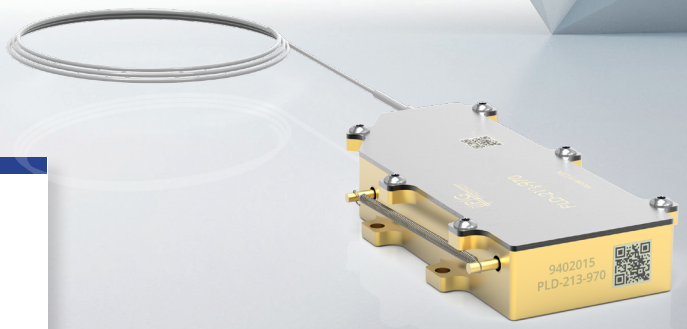
PLD-213-970-CH, 108 W

Multi-mode Fiber-coupled Packaged Diodes



FEATURES

- 970 nm Center Wavelength
- Wavelength Stabilization and Dichroic Options
- 108 W Output Power
- 0.16 NA into 110 µm Fiber Core Diameter
- High Reliability
- Robust Compact Package

APPLICATIONS

- Amplifier Pumping
- Direct Diode Lasers
- Laser Pumping
- Material Processing
- Graphic Arts / Printing
- Medical & Dental
- Illumination
- Photovoltaics

IPG Photonics' **PLD-213-970-CH** fiber-coupled packaged diodes provide up to 108 W of output power within 0.16 NA. PLD-213 diode features include a 110 µm fiber core diameter and 970 nm center wavelength. Wavelength stabilization and dichroic options are also available.

IPG's best-in-class diode technology offers an ideal combination of power, reliability and form factor. We manufacture to rigorous telecom-grade standards in the world's largest high power diode fab. Each wafer is individually qualified, which sets IPG apart from alternative industrial pump products using short-lived diode bars and bar-stack technologies. PLD-213 packaged diodes are preferred components for fiber amplifier and laser pumping, material processing and direct diode applications.

PLD-213-970-CH, 108 W

Multi-mode Fiber-coupled Packaged Diodes

Optical and Electrical Characteristics*	PLD-213-970-CH
Center Wavelength, nm	968.5
Center Wavelength Tolerance, nm	±5.5
Output Power, W (Typ./Min)	108/100
Wavelength Shift in Current Range 14 - 18 A, nm/A	0.55
Power Shift in Current Range 14 - 18 A, W/A	7.6
Spectral Width, nm	4±2
Threshold Current (I_{TH}), A	1.7
Operating Current (I_{OP}), A	14
Forward Voltage, V	<14.2
Recommended Case Temperature, ºC	25

* Typical performance data measured at 14A, 25ºC

Fiber Characteristics	
Fiber Core Diameter, µm	110
Fiber Cladding Diameter, µm	125
Fiber Buffer Diameter, µm	230
Typ./Max Beam Numerical Aperture (90% power)	0.16/0.18
Fiber Length, m	1.9
Minimum Fiber Bend Radius, mm	30

Maximum Ratings	
Operating Current (I_{OP}), A	18
Reverse Voltage, V	2.5
Case Temperature, ºC	5 - 70
Storage Temperature, ºC	-20 to 60
Lead Soldering Temperature (10 s max) ºC	300
Relative Humidity, %	85

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