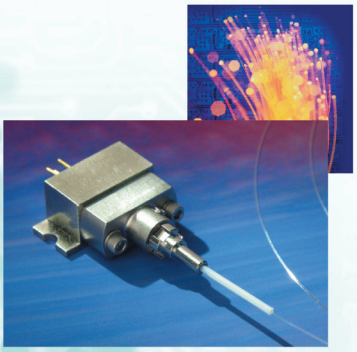
BLUE SKY RESEARCH

Optical Network Components

COOLERLESS EDFA 980 PUMP MODULES EPM980-Series: 50 TO 120 mW



Blue Sky Research Coolerless EDFA Pump Modules represent a paradigm shift in pump module price-performance. They deliver at the highest performance level, but are available in volume at the prices needed for today's deployment of the optical network.

The price-performance difference starts with the Blue Sky Research µLens™ microlens. It is mounted at the diode output and produces the highest coupling of diode-power to output fiber available today. Secondly, it allows the use of a hermetically sealed TO-can diode package that is completely burned-in before assembly of the final package. This improves manufacturing yields over the traditional butterfly package. Further, the µLens™ simplifies coupling by reducing packaging sensitivity to optical alignment. The resulting low-profile EDFA Pump package costs less to produce while conforming to Telcordia GR-468-core Standards. The overall pump package produces one of the most thermally stable power outputs available in a coolerless package. Wavelength thermal stability is assured by use of a Fiber Bragg Grating, eliminating the need for TE cooling.

The Blue Sky Research EDFA Pump Module line offers a wide range of power levels to fit customer requirements. The modules are very competitively priced for high-volume deployments and enable single-channel optical amplifiers ("Amplettes") under $1000 ASP in today's networks.

THE PERFORMANCE YOU NEED AT THE PRICE YOU WANT

- Coolerless, Low Power Consumption
- Low-Cost
- Wide Output Power Range
- High Spectral and Power Stability
- Low-Profile, Minimum Footprint Package
- Telcordia Reliability

APPLICATIONS

- Ideal for All Metro EDFA's
- Enables Low-Cost EDFA's

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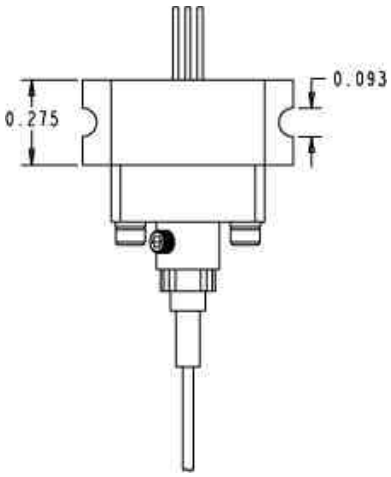
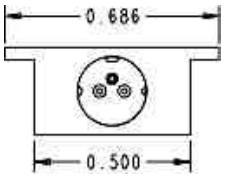
BSR800-9 03/02

Coolerless EDFA 980 Pump Modules
EPM980-Series: 50-120mW

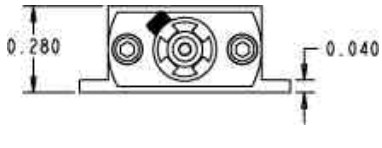
Optical Characteristics:						
Item	**Symbol**	**Test Condition**	**Min**	**Typ**	**Max**	**Units**
Spectrum						
Peak Wavelength[1]	λ_c	T=25°C	975.5, 979 typical			nm
Power in Band	P_{band}	λ_c ±1.5nm	80			%
Spectral Width	ΔλRMS				2.0	nm
Spectral Shift w/ Temp	Δλ/ΔT			0.005	0.01	nm/°C
Spectrum Stability	Δλ/Δt	25°C, I_{op}, t=60 seconds			0.1	nm
Optical Power Stability	$\Delta P_{op}/\Delta t$	25°C, I_{op}, t=60 seconds			0.5	%
Laser Diode						
Threshold Current	I_{th}			20	35	mA
Operating Current	I_{op}	P_{op}=120mW		250		mA
Forward Voltage	V_f	I_{max}			2.0	V
Monitor Photodiode						
Current	I_{mpd}	$I=I_{op}$	0.1	0.25	3.0	mA

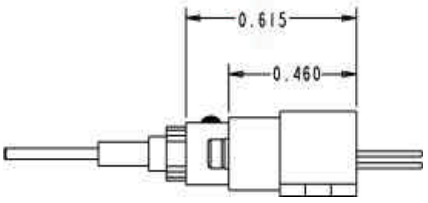
1. Peak wavelength based on fiber Bragg grating



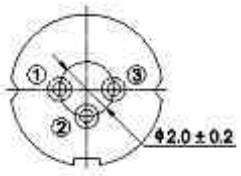


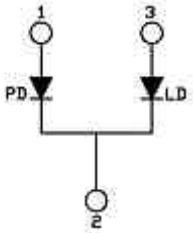
Absolute Maximum Ratings				
Item	**Condition**	**Min**	**Max**	**Units**
Laser Diode				
Forward Current			360	mA
Current Transient	1µs max		1	A
Reverse Voltage			2.0	V
Monitor Photodiode				
Reverse Voltage			20	V
Forward Current			10	mA
Package				
Storage Temperature		-40	+85	°C
Operating Temperature	Standard	+10	+70	°C
	Select	0	+70	°C
Fiber Pigtail				
Tensile Stress			5	N
Bend Radius		17		mm





Fiber Pigtail Specifications		
Item	**Specification**	**Units**
Type	Flexcore PureMode™ HI1060	
Diameter	250	µm
Length	2.5 +/- 0.1	m





Reliability
Telcordia GR-468-CORE Qualified

Specifications subject to change without notice

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