

ERBIUM AMPLIFIER
COMPONENTS

4-FUNCTION HYBRID

DiCon's 4-Function Hybrid is the first of a series of new amplifier hybrid components based on a DiCon-proprietary planar passive technology. This new platform enables up to 6 passive functions to be integrated within a single component with just one pair of collimating lenses in the signal path. Hence both insertion loss and package size are drastically reduced compared to conventional cylindrically packaged components.



FEATURES

- 1.0 dB loss including Isolator, Tap, Pump Coupler and Service Channel WDM
- Ultra-compact planar package
- Optional integrated photodiode
- Optional (Raman) high power handling capability

APPLICATIONS

4-Function Hybrids are designed for use in erbium amplifiers where a Pump Coupler, Isolator, Tap Coupler, and Service Channel WDM are placed in series. Integrating the 4 functions within a single package eliminates 4 splices from the amplifier assembly process while reducing the total size of the amplifier module.



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COMPONENTS

OPTICAL SPECIFICATIONS¹

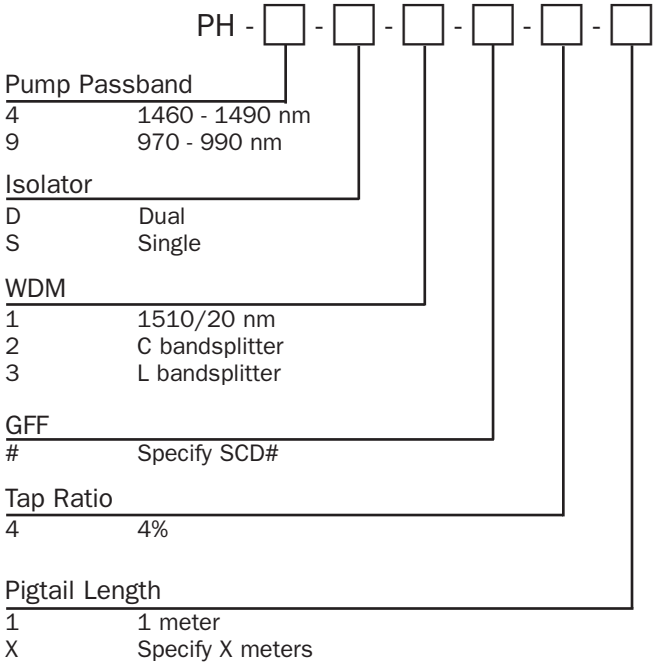
Signal passband	1530.0 nm to 1565.0 nm	
Telemetry passband	1500.0 nm to 1520.0 nm	
Insertion loss	P1 to C	1.0 dB typ., 1.2 dB max.
	P1 to P3	0.3 dB typ., 0.5 dB max.
	P1 to P4 ⁴	13.2 dB min., 14.9 dB max.
	P2 to C	0.3 dB typ., 0.6 dB max.
Flatness	P1 to C	0.15 dB typ., 0.3 dB max.
	P3 to P1	0.05 dB typ., 0.1 dB max.
Isolation	P1 to C	50 dB min.
	P2 to C	15 dB typ., 12 dB max.
	P1 to P3	15 dB typ., 12 dB max.
PDL	P1 to C	0.15 dB max.
Directivity	P1 to P2	55 dB min.
	P2 to P3	55 dB min.
	P3 to C	55 dB min.
	P2 to P1	60 dB min.
Power Isolation ²	C to P1	28 dB min.
PMD	P1 to C	< 0.05 ps max.
Back-reflection	- 50 dB max.	
Fiber type	9/125 Corning SMF - 28	
Fiber jacket	250 micron, 200 kpsi bare fiber	
Optical power ³	300mW max.	
Operating temp.	- 5°C to +65°C	
Storage temp.	- 40°C to +85°C	

1. All specifications referenced without connectors.
2. Relative to 23 °C.
3. Up to 2W by special request.
4. Other tap ratios available by request.

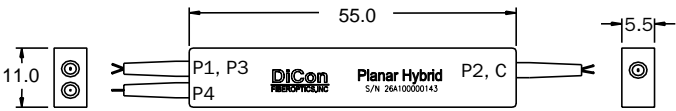
PORT ASSIGNMENTS

P1 to C	Signal in -> signal out
P1 to P3	Pump add
P1 to P4	Signal tap
P2 to C	Telemetry add

ORDERING INFORMATION



HOUSING DIMENSIONS



Units: mm