NETWORK AMPLIFICATION

Rack Raman counter-pump sources

Reverse-pumped Raman options with distinct conventional, second-order and third-order power limits.

Applications to discuss: Optical network integration; Fibre-link engineering.

Selection points
1.5-5 W pump limits by option / Distributed Raman pre-amplification / Extended-band option specified separately

Configuration options

Configuration	Maximum output power	Maximum signal-band insertion loss
Conventional counter-pump	≤1.5 W	3.8 dB
Second-order counter-pump	≤3 W	3.8 dB
Third-order counter-pump	≤5 W	4.0 dB
Extended-band counter-pump	up to 2 W	3.8 dB

Each row is a separate configuration. Limits from different rows must not be combined.

Technical details

Parameter	Specification or condition
Degree of polarization	Conventional counter-pump, Second-order counter-pump, Third-order counter-pump: <4%; Extended-band counter-pump: 4%
Signal-path polarization-dependent loss	0.3 dB
Supervisory-channel wavelength	Conventional counter-pump, Second-order counter-pump, Third-order counter-pump: 1574 nm; Extended-band counter-pump: 1576 nm
Supervisory-channel optical budget, pump off	Conventional counter-pump, Second-order counter-pump, Third-order counter-pump: 88 dB
Optical wavelength range	Extended-band counter-pump: 1524 - 1572 nm
Supervisory-channel optical budget	Extended-band counter-pump: 88 dB

Integration and delivery

Item	Configuration detail
Format	2U rack subsystem
Control	Ethernet, web interface and SNMP
Monitoring	Fibre-integrity monitoring and automatic shutdown/restart features

Conditions and configuration notes

• A value in dBm describes optical power; a value in dB describes gain, loss or an optical budget. A link budget is not a distance in kilometres.

• Performance depends on channel loading, fibre losses and the selected operating point; family limits do not automatically apply together.

• The extended-band table states 1524-1572 nm. It does not assign that same operating range to every other pump option.