NETWORK AMPLIFICATION

Rack pump sources for remote optical amplifiers

Terminal pump arrangements for remotely energized in-line optical gain elements.

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

Selection points
Up to 5 W in selected pump arrangements / Remote in-line gain element required / Separate transmit and receive designs

Configuration options

Configuration	Main pump wavelength	Pump seed wavelength	Maximum output power
Single-wavelength pump	148x nm	Not specified	≤2 W
Dual-wavelength pump	142x nm	148x nm	≤5 W
Second-order pump	136x nm	142x + 148x nm	≤5 W
Cascaded third-order pump	127x nm	148x nm	≤5 W

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

Technical details

Parameter	Specification or condition
Signal-band insertion loss	Single-wavelength pump: 3.9 dB; Dual-wavelength pump, Second-order pump: 4.1 dB; Cascaded third-order pump: 4.4 dB
Degree of polarization	<10%
Supervisory-channel wavelength	1574/1610 nm

Integration and delivery

Item	Configuration detail
Format	2U terminal subsystem
Remote element	Passive optical gain assembly spliced into the span
Control	Power control, supervisory monitoring and SNMP interfaces

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 x in 148x, 142x, 136x and 127x nm denotes an unspecified last digit; exact pump and seed wavelengths require confirmation.

• A blank seed-wavelength entry is left unspecified rather than interpreted as proof that no seed is required.