



Enterprise Datacenter Interconnect

Smartoptics in brief

Global technology company with main offices in Norway, Sweden and the USA



R&D located in Scandinavia



Founded in 2006



+150 business partners and strategic collaborators



140+ employees in seven countries



Partnering with leading technology providers



In-house support by our own engineers



21% average annual growth past five years



Listed on Euronext Growth Oslo in 2021

Smartoptics product overview – applications and use cases



MANAGEMENT

MULTI VENDOR

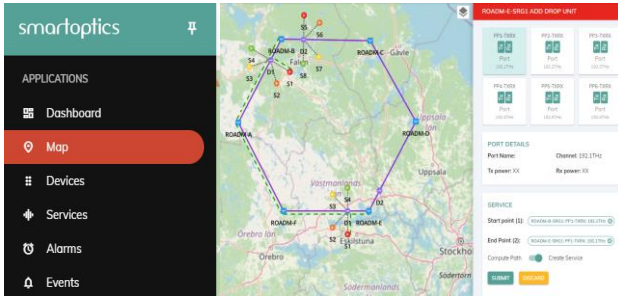
FCAPS

INVENTORY

netFLEX

SoSmart

Domain control and network planning



CONTROLLER

PLANNING

MANAGEMENT

ORCHESTRATION

DCP-M

Automation & cost efficiency



DCI

AUTOMATION

16 TBIT/S

METRO



OPEN LINE SYSTEMS

DCP-F

Versatile line-system toolbox



METRO

FLEXIBILITY

19.2 TBIT/S

EDGE



DCP-R

Ultimate network flexibility and control



METRO

FLEXIBILITY

19.2 TBIT/S

REGIONAL

SDN



DCP-2

L1 Transponders and Muxponders

DCP-110

10 x 10G



DCP-404

4 x 100G



DCP-1203

3 x 400G



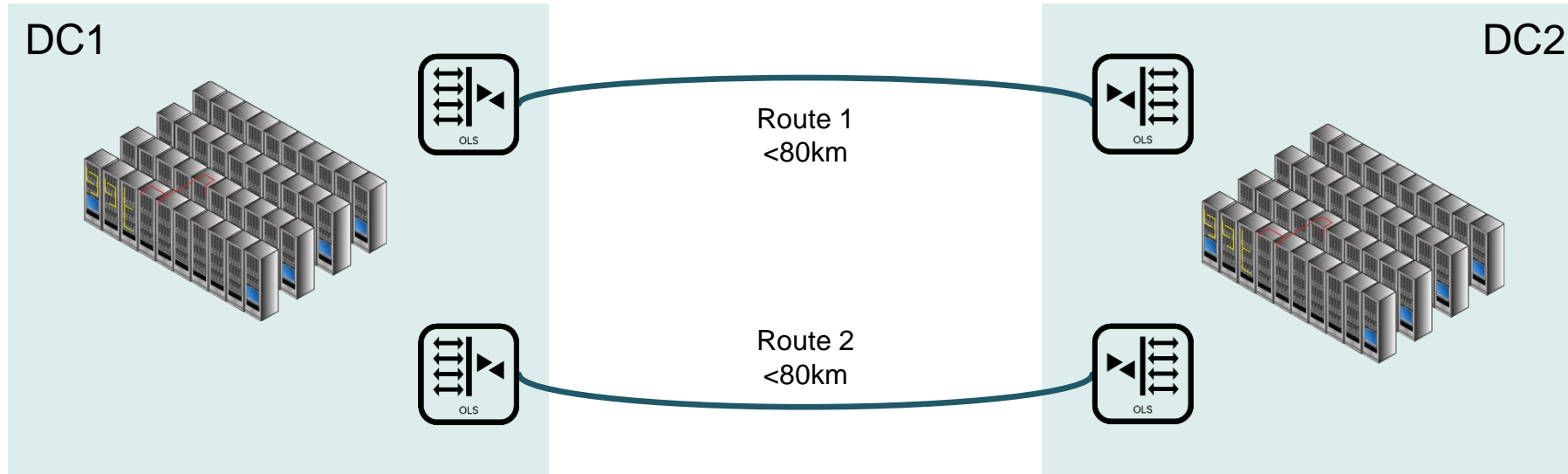
L1 TRANSPORT



Datacenter Interconnect



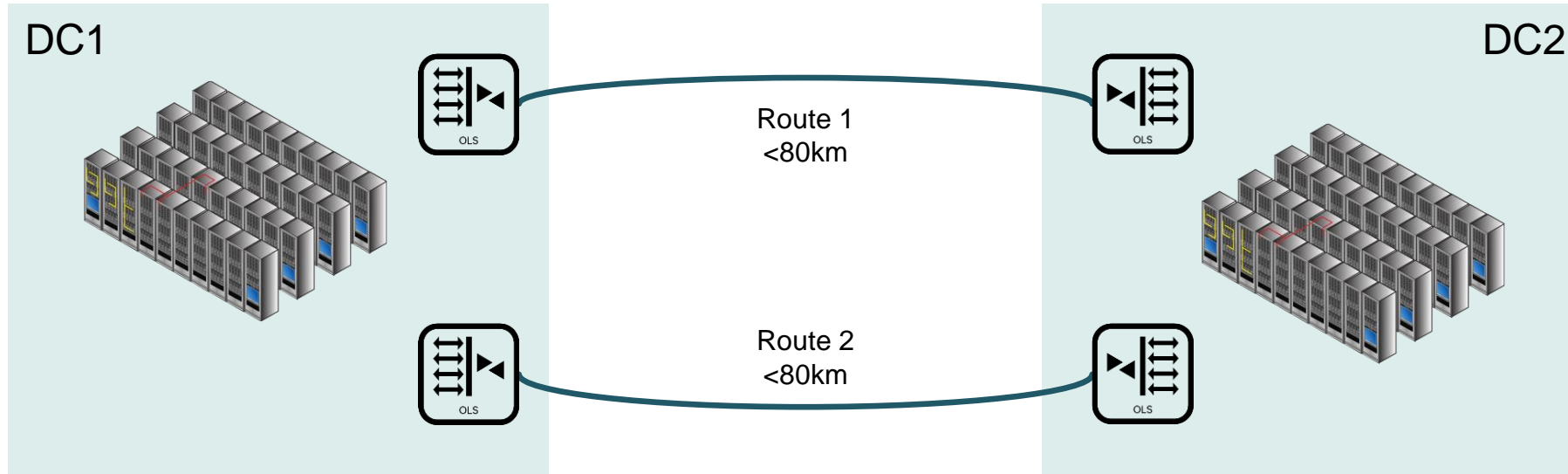
Typical DCI Scenario



General requirements:

- Easy to use (ideally w/o the need for DWDM experts and special measurement equipment)
- Ethernet + SAN traffic
- High bandwidth / low latency
- Space / power saving

Typical DCI Scenario

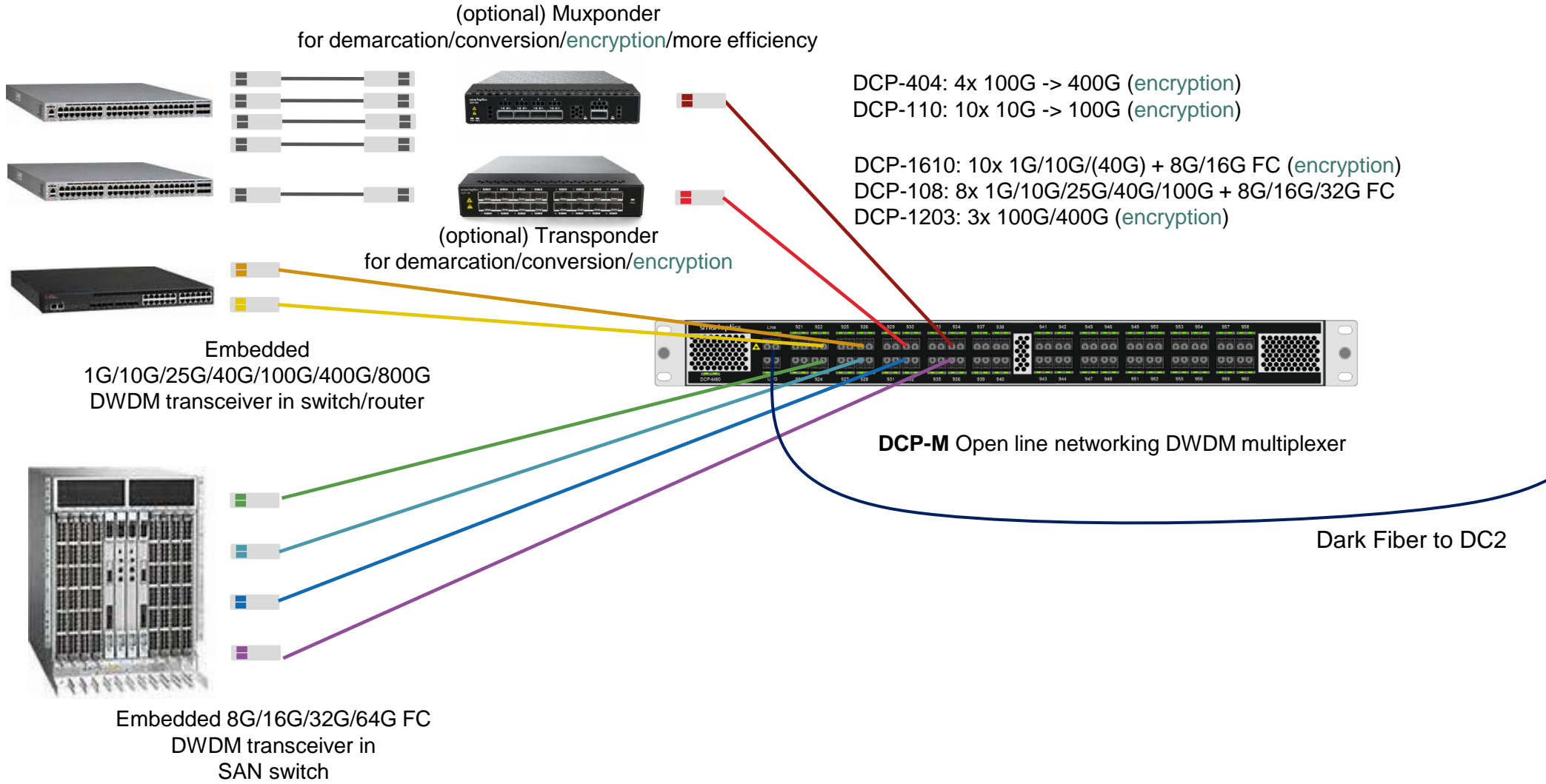


Typical traffic requirements:

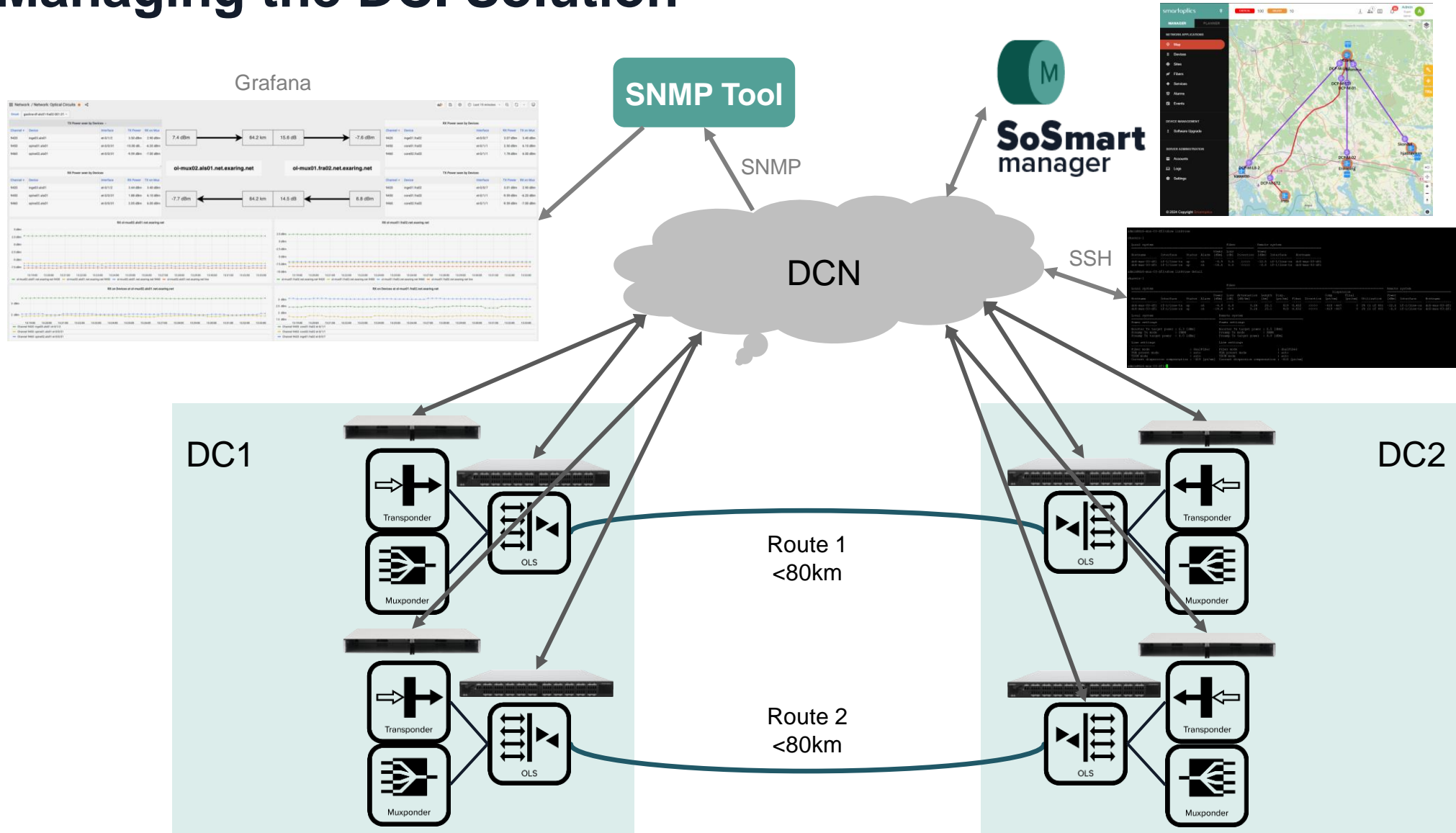
- Small Enterprise: SAN + Ethernet, 1-4x 32G FC, 1-4x 10G, 1-2x 100G per route
- Large Enterprise: SAN + Ethernet, up to 40x 32G FC, up to 100x 10G, up to 40x 100G per route
- DC / IX Customers: only Ethernet, anything from many 10G up to many 100G/400G



Smartoptics Open Line System Philosophy



Managing the DCI Solution

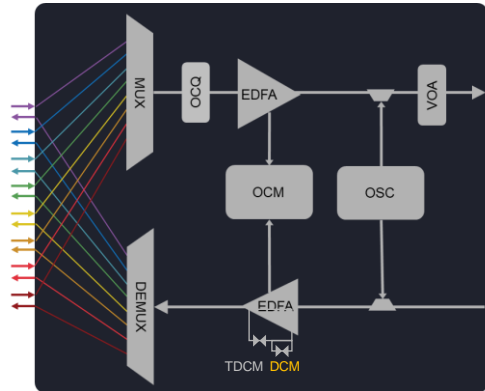


Open Line Systems for DCI – up to 16Tb (16x 400G)

DCP-M40-PAM4-ER/ER+/ZR - Multiservice



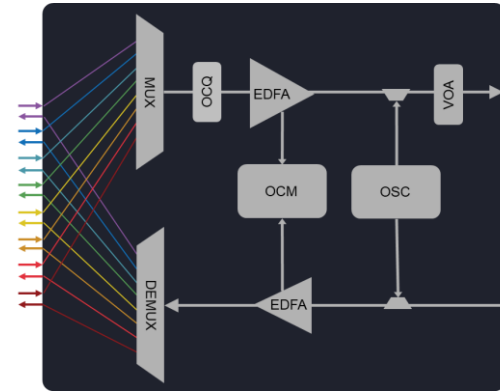
DCP-M40-C-ZR+ - Coherent Services



- Automatic fiber distance measurement and Optical power balancing for incoming signals
- Complete zero-touch automatic optical setup
- Optical monitoring for fiber and services

- Support for mixture of 100G PAM4 (1st and 2nd Gen), NRZ & 100G, 200G & 400G coherent wavelengths + 64G FC PAM4
- Automatic dispersion compensation setting
- Perfect fit for 16G/32G FC SAN applications mixed with Ethernet
- Optical performance:

100G PAM4:	18dB/80km
16G/32G FC:	22dB/120km
10G:	26dB
Coherent:	29dB



- Optimized for 100G, 200G & 400G coherent wavelengths
- NRZ modulated formats supported but distance limited by dispersion (no dispersion compensation)
- Perfect fit for coherent 100G-400G applications & 10G for short links
- Optical performance: 100G/200G: 29dB / 400G ZR+: 28dB

Summary

DCP-M40



General requirements:

- ✓ Easy to use (ideally w/o the need for DWDM experts and special measurement equipment) ➔ Fully automated system
- ✓ High bandwidth / low latency ➔ 40 channels x 400G max = 16TB / end-to-end optical transport
- ✓ Space / power saving ➔ 1RU / 45W

Typical traffic requirements:

- ✓ Small Enterprise: SAN + Ethernet, 1-4x 32G FC, 1-4x 10G, 1-2x 100G per route
 - ✓ Large Enterprise: SAN + Ethernet, up to 40x 32G FC, up to 100x 10G, up to 40x 100G per route
 - ✓ DC / IX Customers: only Ethernet, anything from many 10G up to many 100G/400G
- } ➔ **1G – 400G supported**

Thank you