



Rosenberger

Enterprise, Data Center, POL and FTT-MDU Solutions

June 22, 2020

Rosenberger – a Family Owned Business



Hans Rosenberger
(Chairman of the Board)



Peter Rosenberger
(COO)



Bernhard Rosenberger
(CTO)

Five Major Business Areas



Communication



Automotive



Medical &
Industries



Test &
Measurement



Custom
Machining

Business Snapshot

- Founded 1958 in Tittmoning (Southern Germany)
- Revenue in 2019: \$1.6 Billion USD
- Employees in 2019: 11,000+ (Worldwide)
- Manufacturing Locations: 28 (Worldwide)

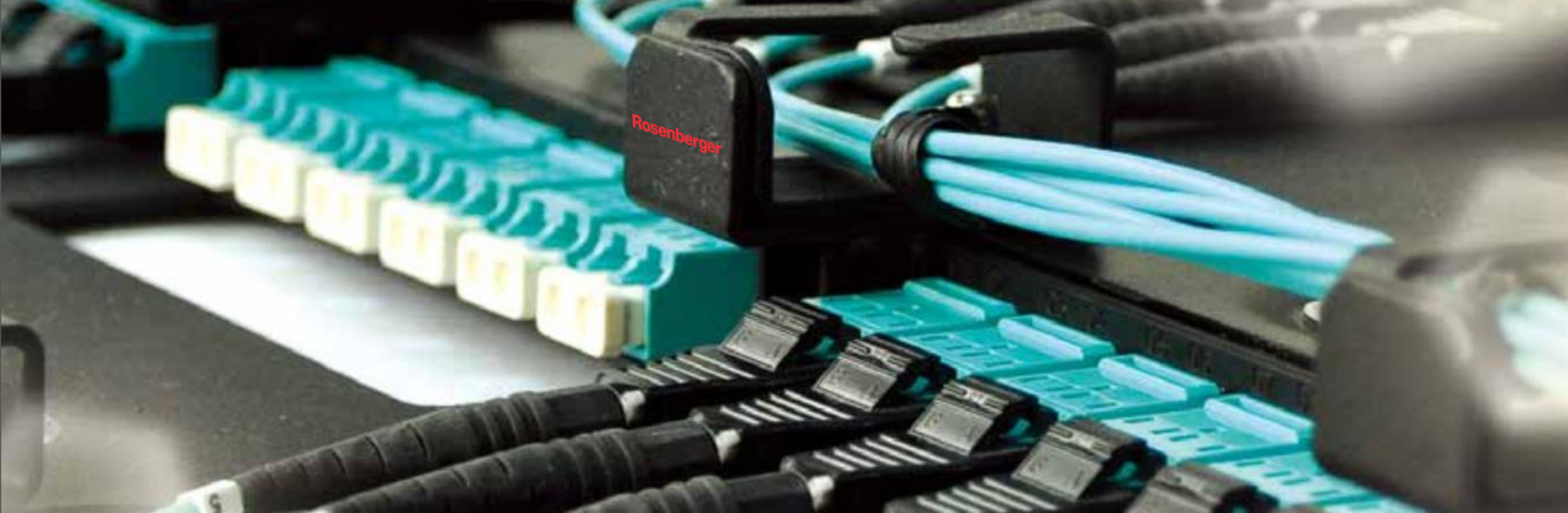
What We Stand For

- Global footprint with manufacturing facilities strategically located to facilitate local customer service
- Superior manufacturing quality at a consistently high level at all locations worldwide
- Preferred primary supplier to market-leading OEMs
- In-house research and development for over 30 years with more than 500 engineers
- High vertical integration – everything from a single source
- Technology leadership in our business niches

Since 1991 Rosenberger Optical Solutions & Infrastructure has been an expert and Global leader in innovative fiber optic and copper cabling infrastructure and service solutions for Data Centers, Local Area Networks, Telecom and Industrial. The products and services can be found wherever largest amounts of data have to be transferred quickly and securely.

Global Footprint





About Rosenberger:

Rosenberger designs and manufactures world class solutions to address a variety of needs in Data Centers and Enterprise networks around the globe. With over 25 years of optical fiber network experience, and optical manufacturing in North America, Europe, Asia, and South America, our optical interconnect solutions are deployed in many of the largest Data Centers and Enterprises around the world. As the optical networking industry moves from many smaller enterprise owned data centers to fewer “hyper-scale” providers of Cloud and Colocation hosting, Rosenberger has continued to innovate solutions to address the changing requirements.

For further information, please visit: www.rosenberger.com

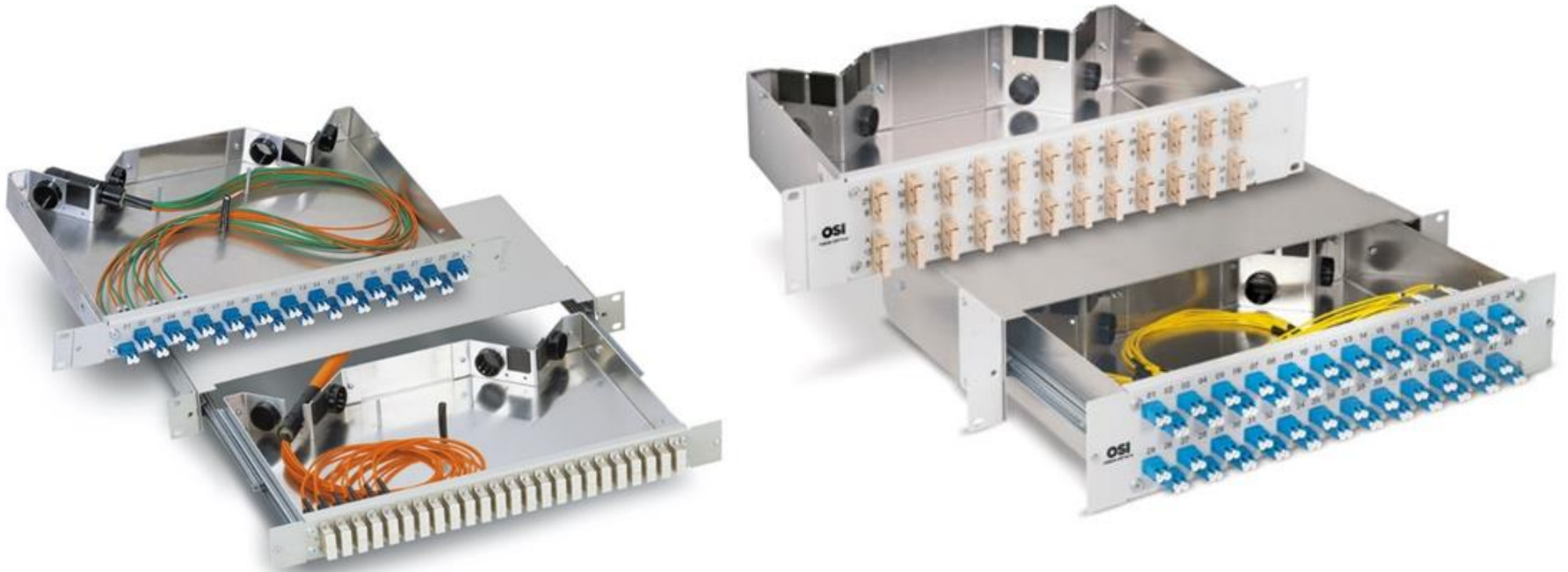


Rosenberger

General Enterprise/Data Center Solutions

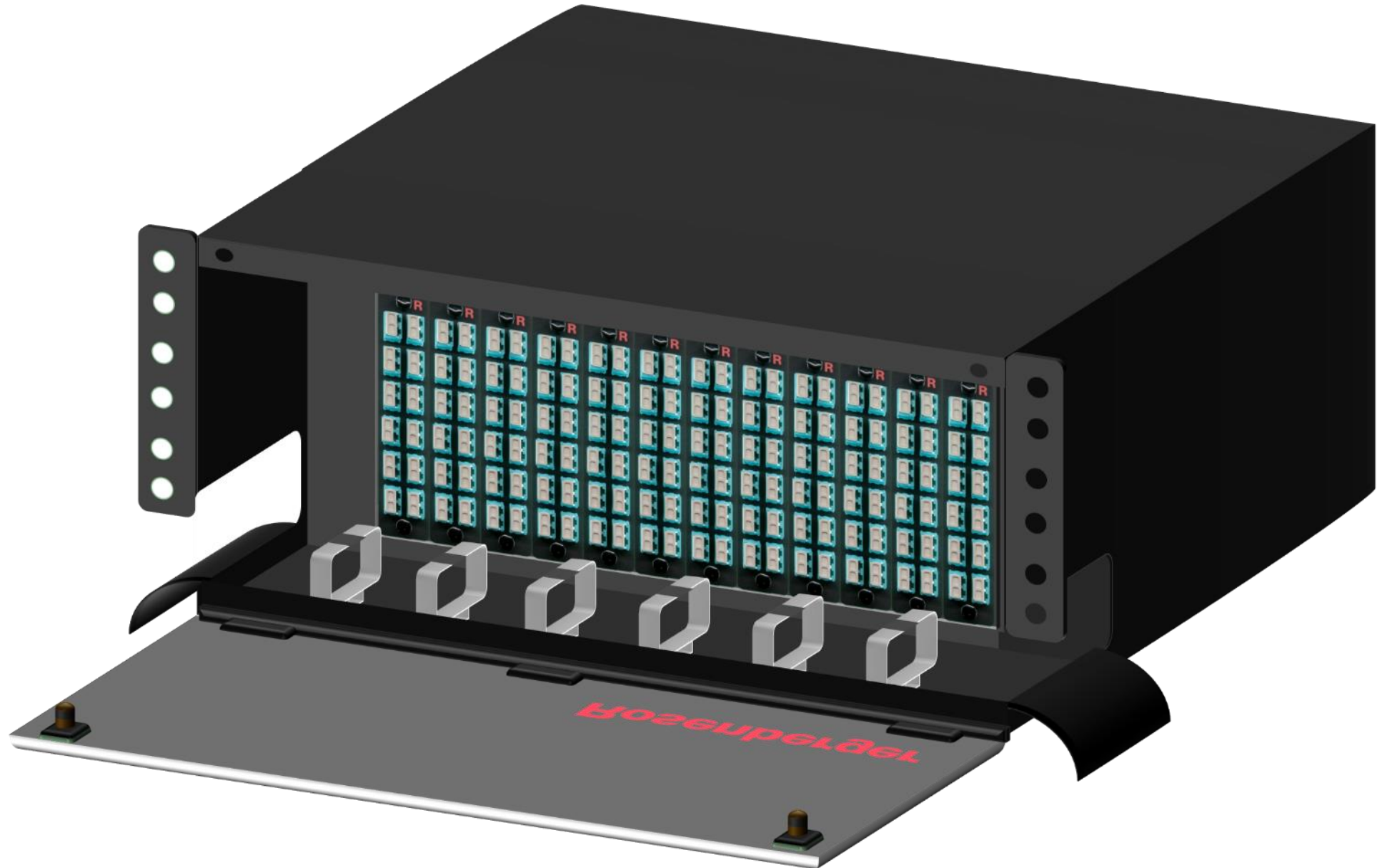
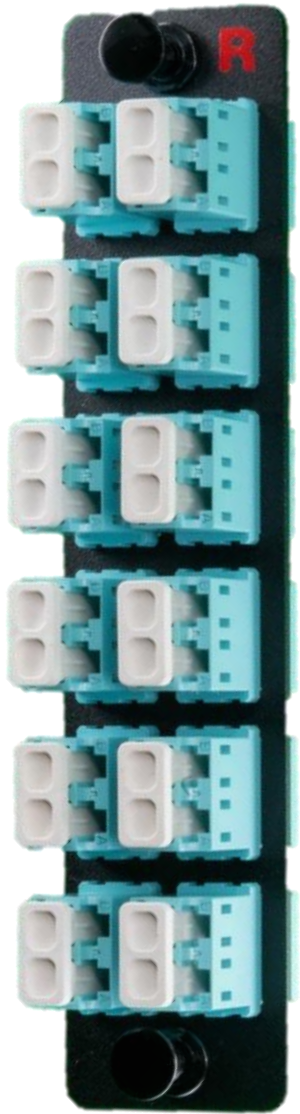
RGX Classic

Rosenberger



RGX Modular

Rosenberger



SMAP-G2 Standard (SD)

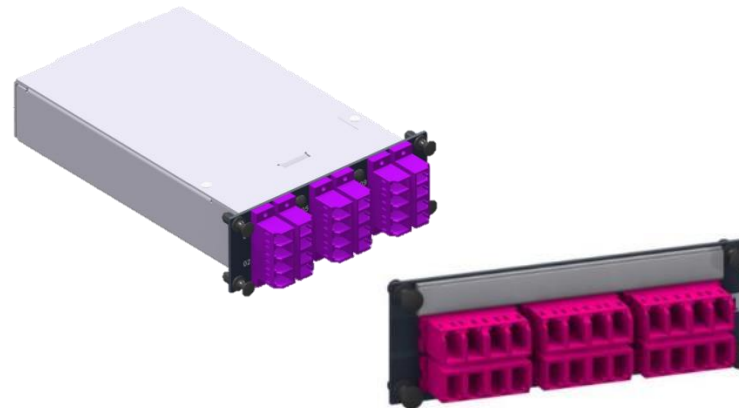
Rosenberger



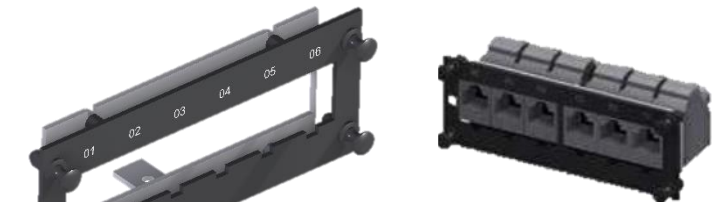
SMAP-G2 19" Empty Panels RAL9005 black part numbers

1HU	171A0001
2HU	172A0001
3HU	173A0001
5HU	175A0001

4 Cassettes/Adapter Plates
8 Cassettes/Adapter Plates
12 Cassettes/Adapter Plates
24 Cassettes/Adapter Plates



1/4 Adapter Plates and Cassettes



1/4 Cu Keystone Jack
Adapter Plates



1/2 Adapter Plates

SMAP G2 4/4 Family

Rosenberger

19" 1HU SMAP-G2 SD

48 LC-Duplex ports



LC-Duplex

19" 1HU SMAP-G2 HD

72 LC-Duplex ports



LC-Duplex Push Pull Boot

19" 1HU SMAP-G2 UHD

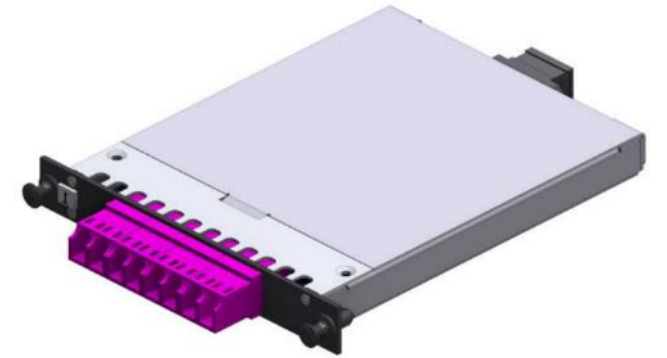
96 LC-Duplex ports



LC-Duplex Push Pull Boot

SMAP-G2 High Density (HD)

Rosenberger



confidential

SMAP-G2 High Density (HD)

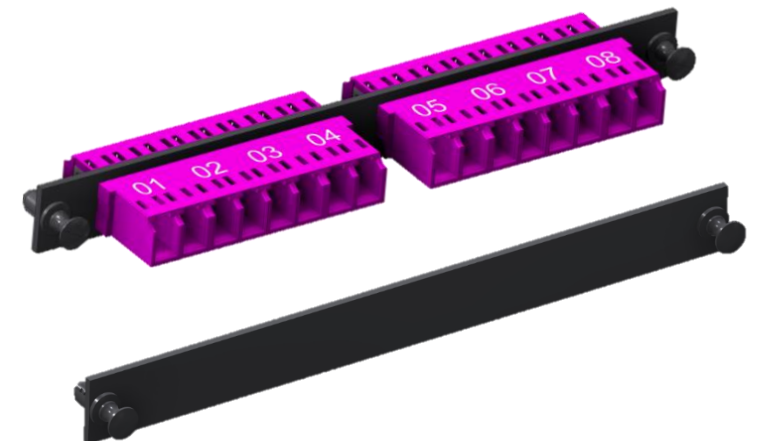
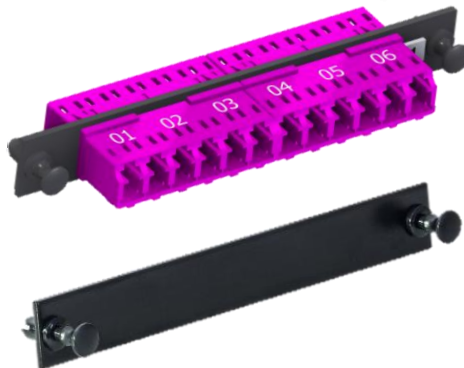
Rosenberger



6/6 - "OCTO" (Base 8)

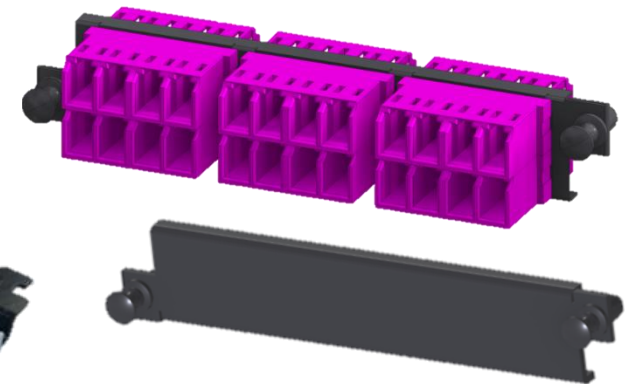
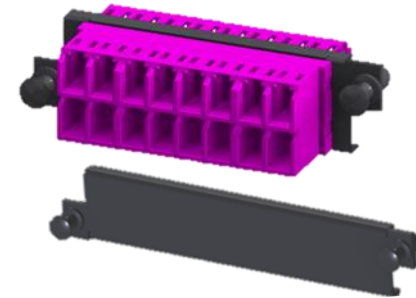
4/4 - "DUODECIM" (Base 12)

3/3 - "SEDECIM" (Base 16)

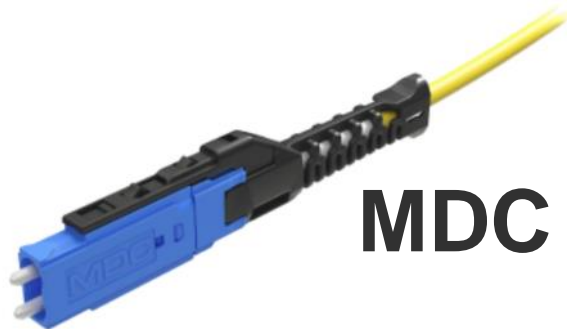


SMAP-G2 Ultra High Density (UHD)

Rosenberger



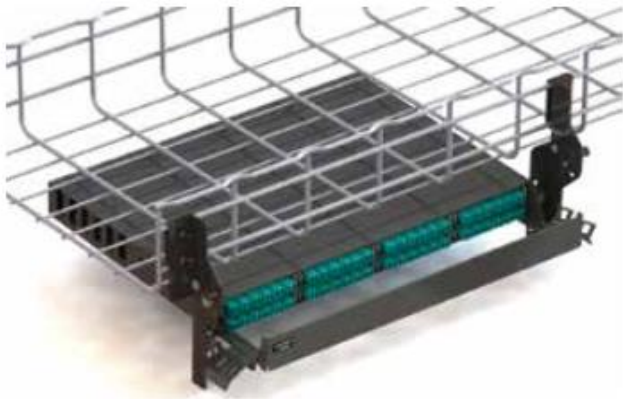
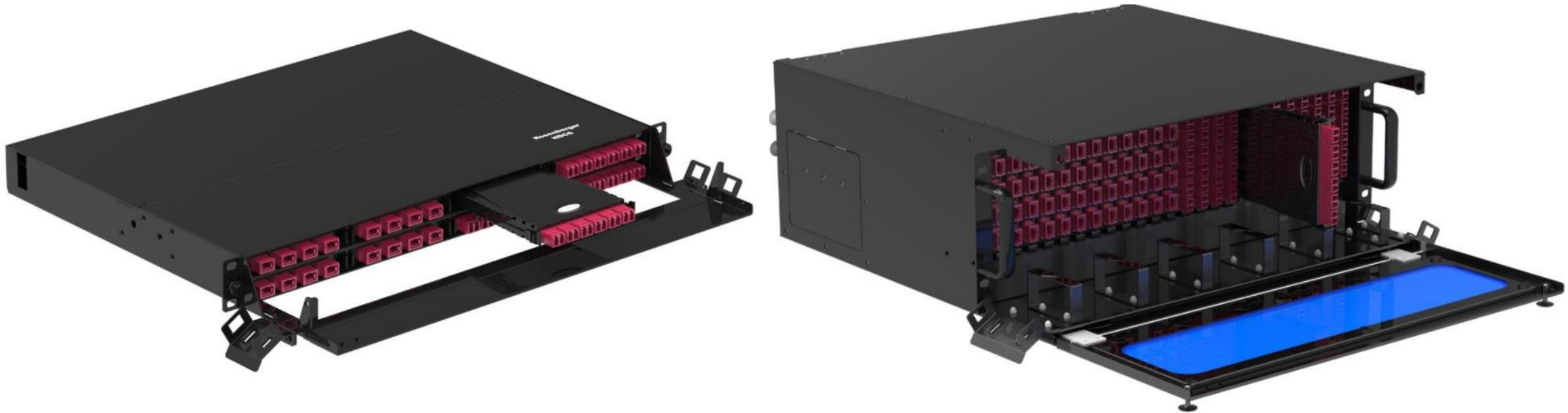
432 Fibers in 1RU SMAP G2 HD Panel



MDC



SN



MTP-LC Module



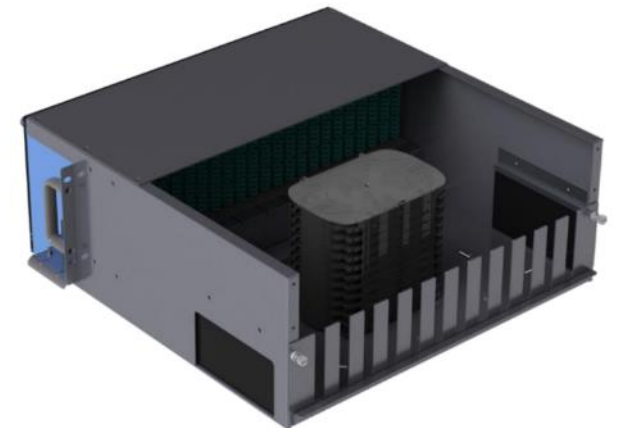
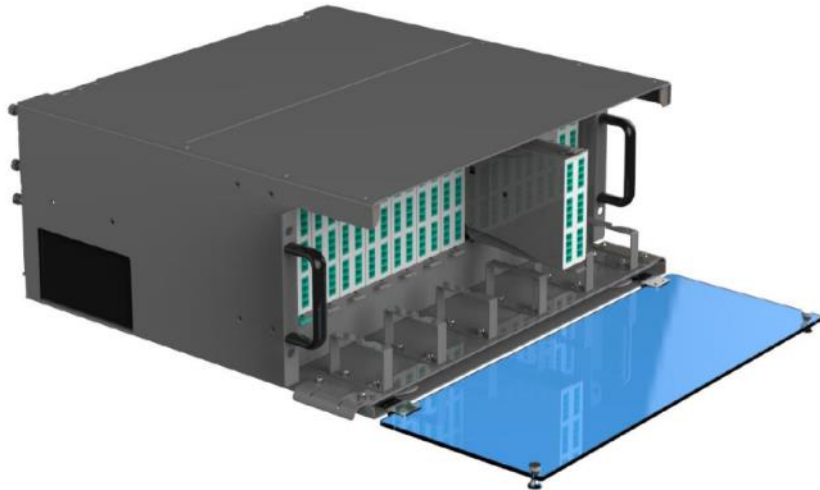
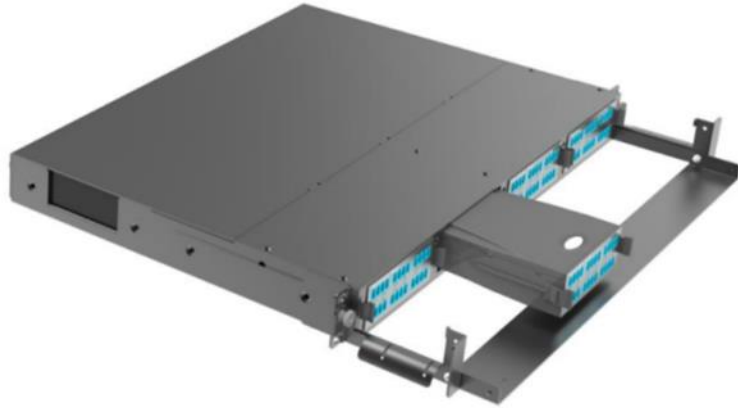
LC Adapter Plate



MTP/MPO Adapter Plate



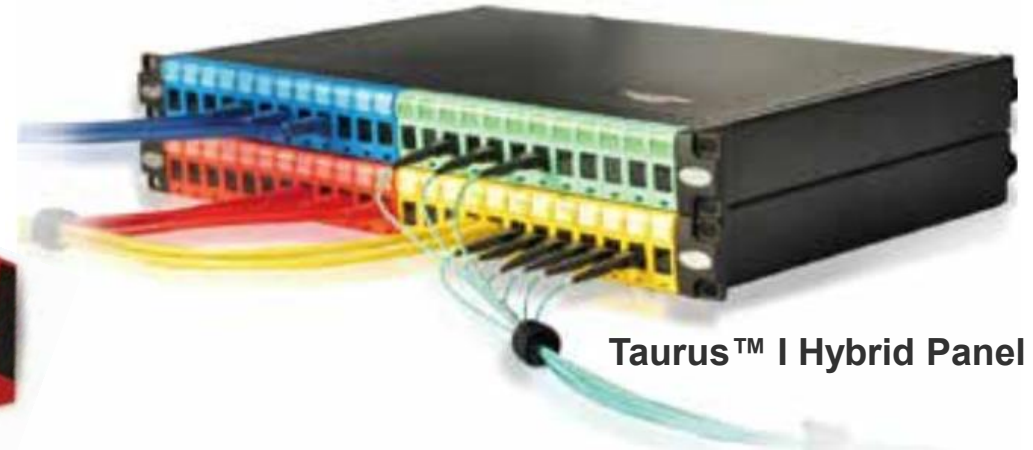
Blind Cover



Taurus™ Hybrid Cu/FO Panels, Modules, and Adapters



Taurus™ II Hybrid Panel



Taurus™ I Hybrid Panel



Taurus™ II Hybrid Shuttered
Identification Modules



Standard Keystone Jack



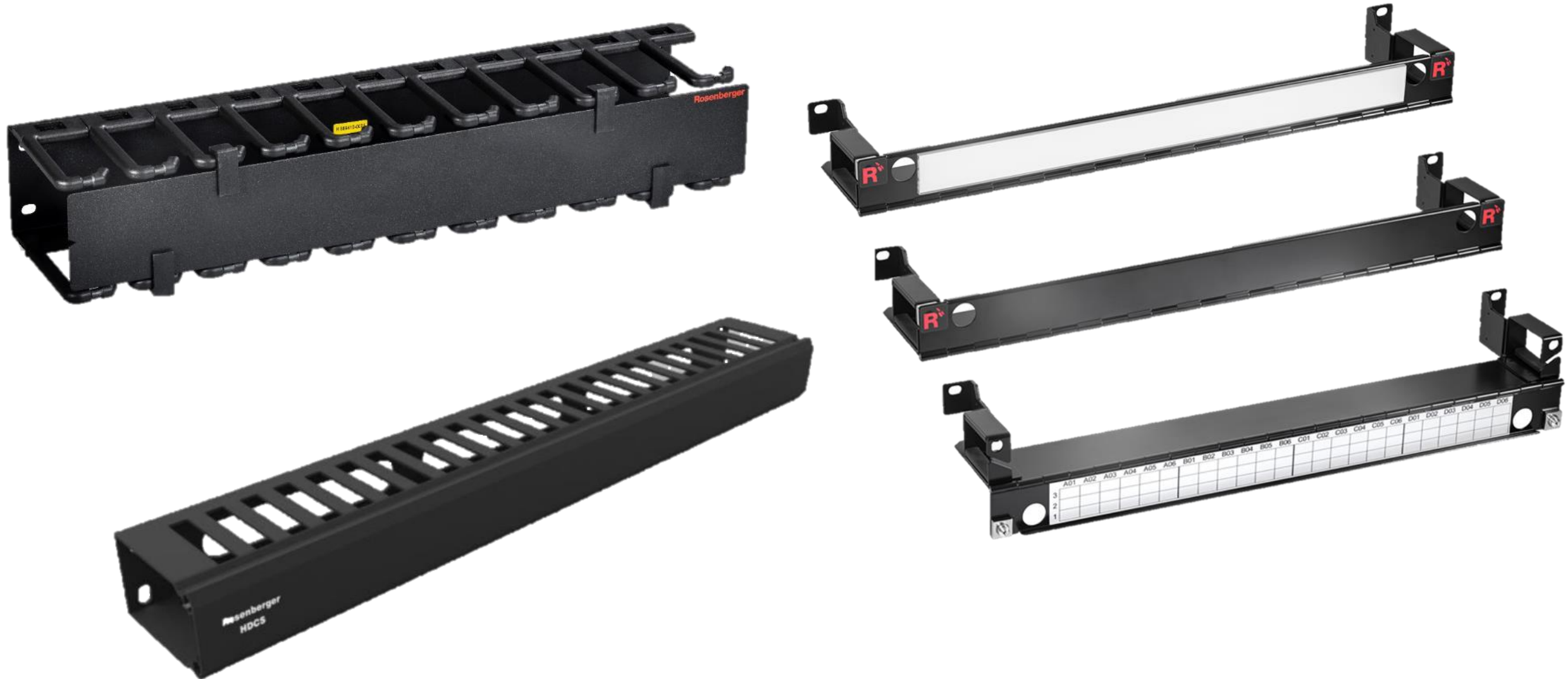
LCD FO Keystone Adapter



Tool-Less Keystone Jack

Cable Management

Rosenberger



Other versions and sizes available

confidential

COMPARISON OF MAXIMUM CHANNEL LENGTHS*



150 m for IEC 61755-5 Ed. 1.0 CD Grade Cm



165 m for PreCONNECT® PURE

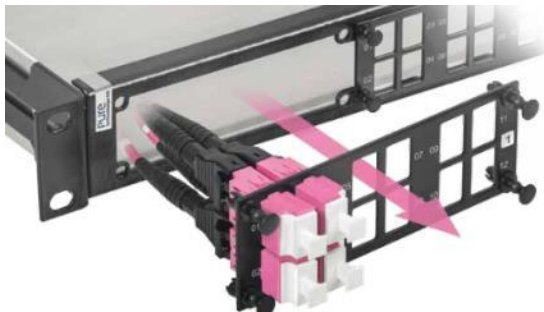
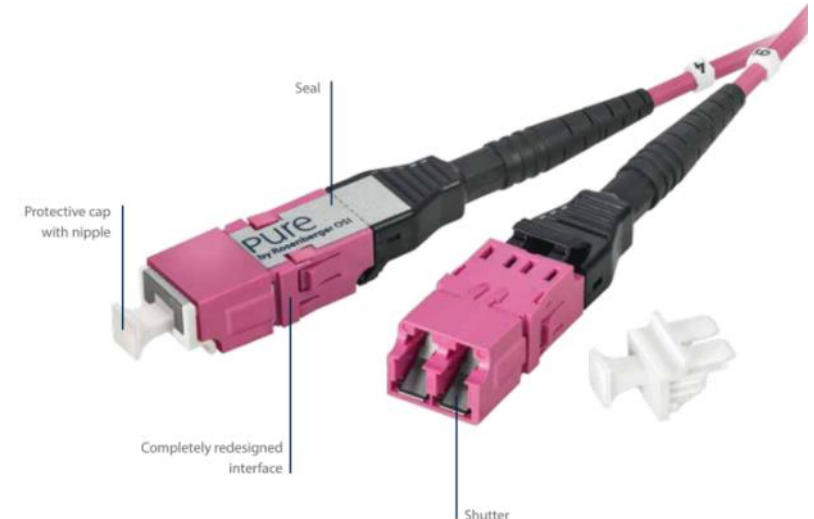
COMPARISON OF POSSIBLE CONNECTIONS*
At maximum IL (0.4 and 0.6 dB, respectively)



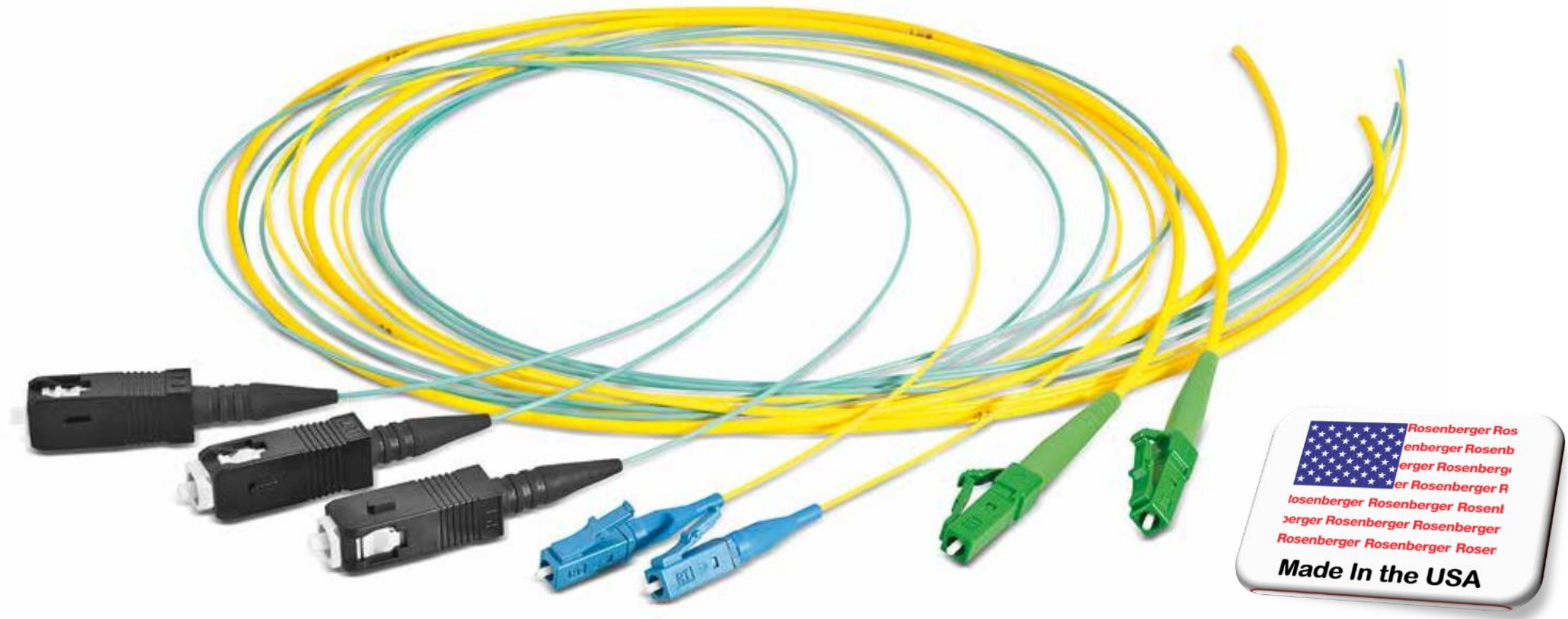
1 connection for IEC 61755-5Ed. 1.0 CD Grade Cm



2 connections for PreCONNECT® PURE



Quick Turn Trunks and Assemblies manufactured at our North American Headquarters in Akron, PA



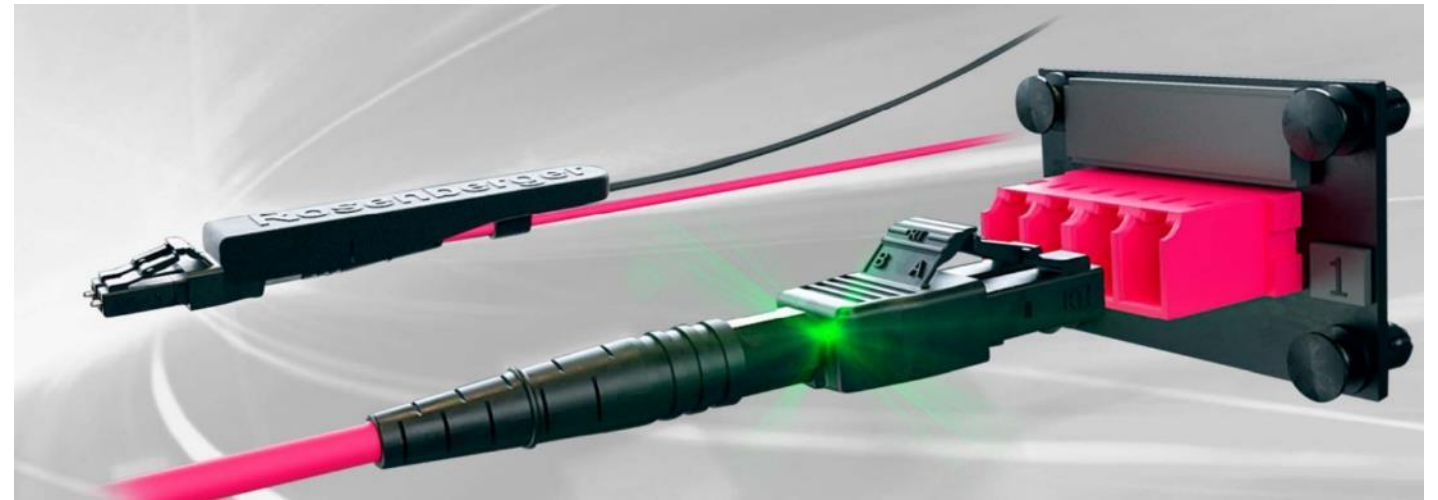
PreConnect Indoor Backbone Trunk

- Factory Terminated
- OFNR or OFNP
- Singlemode, OM3, OM4
- SC, ST, LC, MTP
- 4, 6, 8, 12, 16, 24, 36, 48, 72, and 144F



Identification Patch Cord (IDP)

Rosenberger



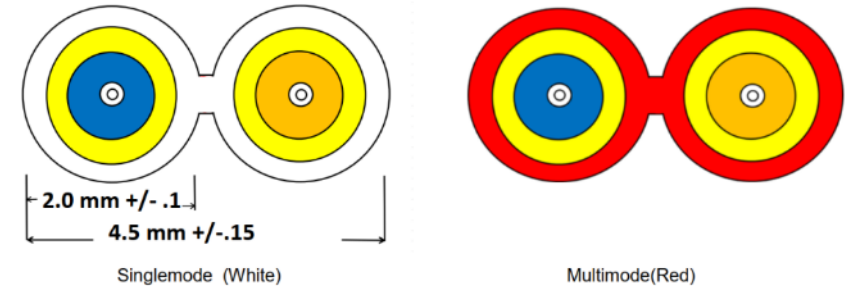
Operating Data Centers requires frequent reconfiguration of data cabling, usually done by manual patching. Disruption of signal is often caused by unplugging the wrong patch cord.

The Rosenberger Identification Patch Cord (IDP) makes the identification of patch cord ends easier and faster. This helps to maintain high availability within the Data Centers.



Test Reference Cords

Rosenberger



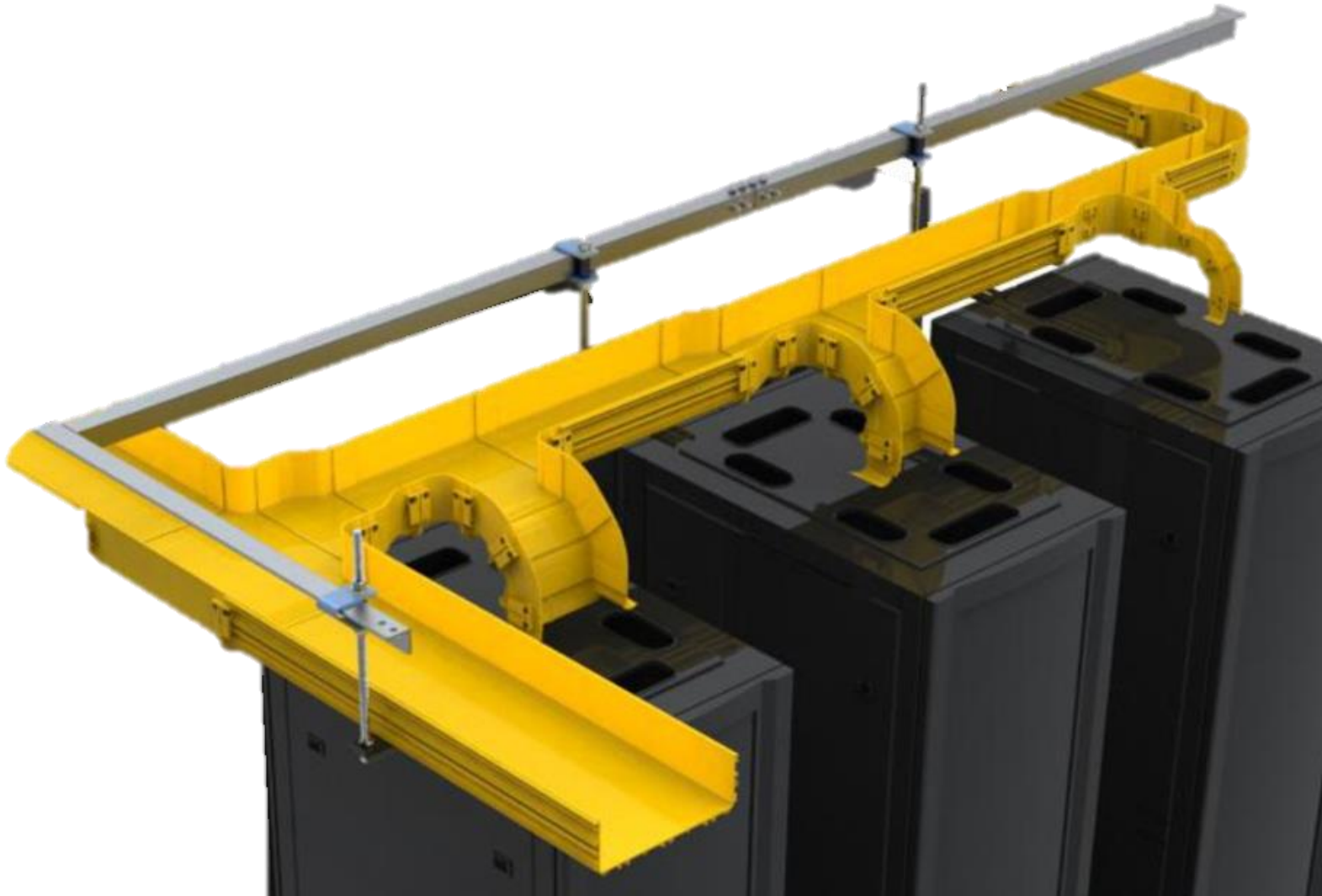
Duplex Zipcord Optical Fiber Cable Cross Sections

These fiber optic Test Reference Cords are for optical loss test sets. SC Red to LC Black side A (Tx), with return leg Red LC to Black LC side B (Rx). Optional +21" on the SC (Tx) leg to accommodate mandrel wrap if optical source (Tx) is not EF compliant or if a Mod-Con is not being used.

These Test Reference Cords have boots that follow the Fluke Networks color code convention in the "Set Reference Wizard" on the CertiFiber Pro. Other OLTS manufacturers may use different colors, but the assemblies will operate agnostically.

Calhas Fiber Moat

Rosenberger



Active Optical Cables (AOC)

(10GBASE-SR, 25GBASE-SR, 40GBASE-SR4, 100GBASE-SR4)



100G QSFP28 to 4*25G SFP28 Active Optical Cable



SFP+/SFP28 Active Optical Cable

Direct Attach Copper (DAC)

(SFP+, QSFP+, QSFP28 – QSFP-DD)



100G QSFP28/40G QSFP to 4X25G/10G Splitter Copper Cable



10G SFP+/25G SFP28 Passive Copper Cable

Direct Attach Copper (DAC) (QSFP-DD)



- Passive Direct Attach Cable Assembly
- QSFP-DD 400G data rate (50 Baud - PAM-4)
- MSA-compliant high-density connectors
- Copper link length up to 2.5m
- Low insertion loss
- Low Crosstalk
- Hot pluggable

Active Electric Cable (AEC/DDC) (QSFP-DD)



- Active Direct Attach Cable Assembly
- QSFP-DD 400G data rate (50 Baud - PAM-4)
- MSA-compliant high-density connectors
- Copper link length up to 7m
- Reduced diameter, short length available (DDC)
- BER <10⁻¹⁵ (Post FEC)
- Low power consumption [< 8.5W (AEC) / <4.5W (DDC)]

Rosenberger

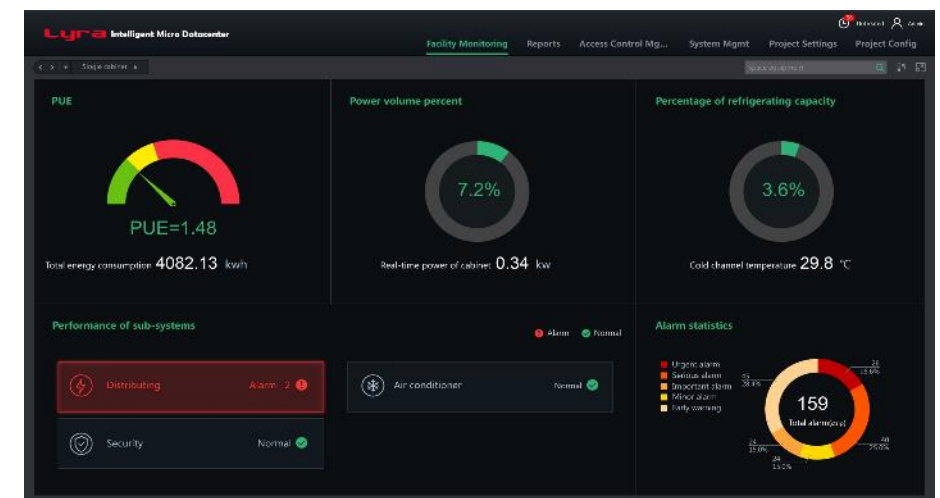
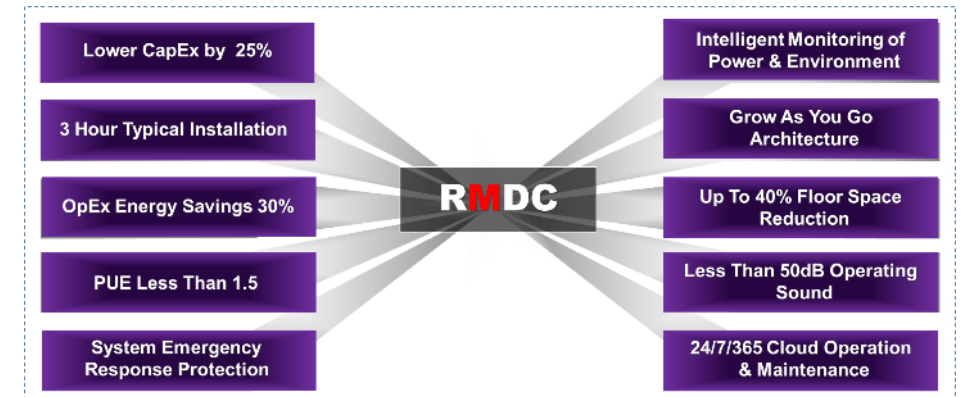


Lyra - Smart Network Rack System

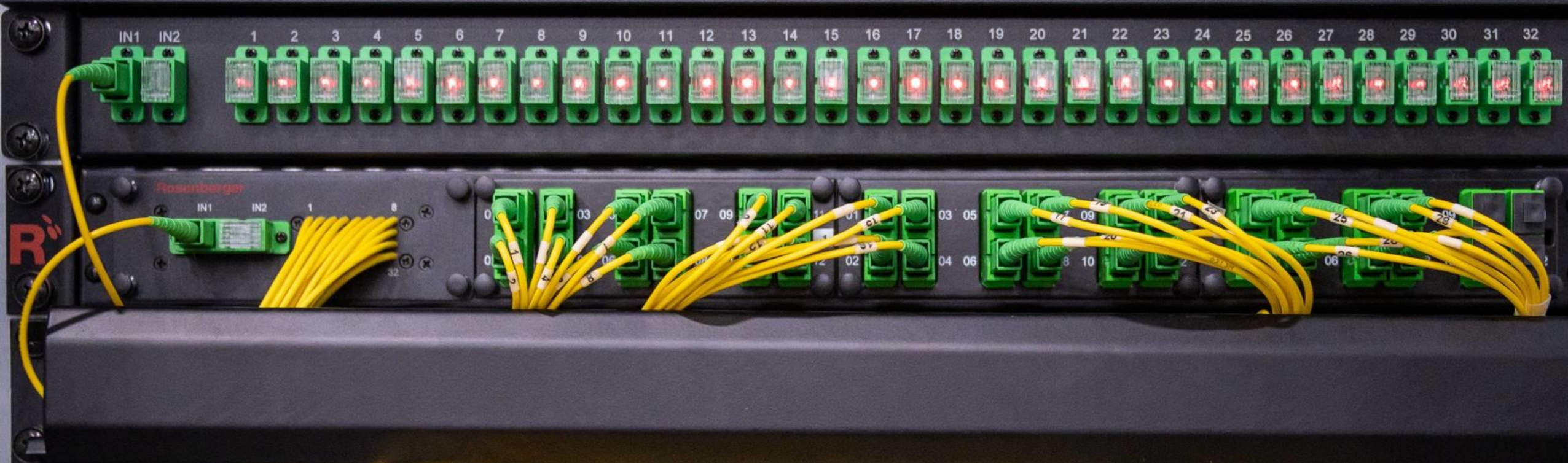
Lyra RMDC

Lyra - Smart Network Rack System

The Lyra Smart Network Rack System can function as a stand-alone telecom room (TR) or a micro Edge Data Center. The self-contained unit incorporates a power distribution system, an internal hot aisle/cold aisle cooling system, smart UPS, as well as power, environmental, and security monitoring and management.



Rosenberger



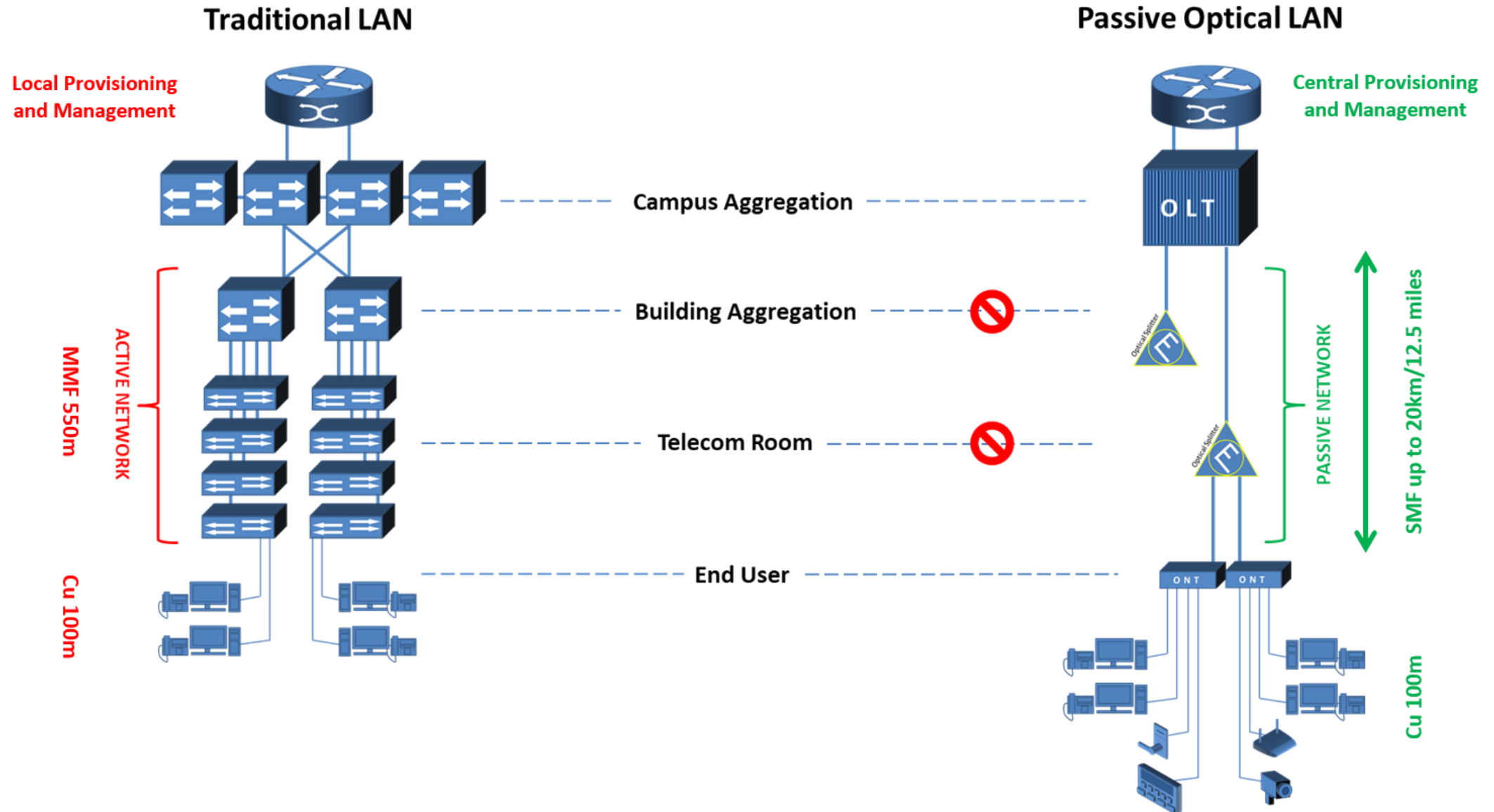
Distributed Fiber LAN - POL

Passive Optical LAN

Rosenberger
North America

Introduction to Passive Optical LAN (POL)

Rosenberger



Introduction to Passive Optical LAN (POL)

Rosenberger



Rack Mount PLC Splitters and Patch Field



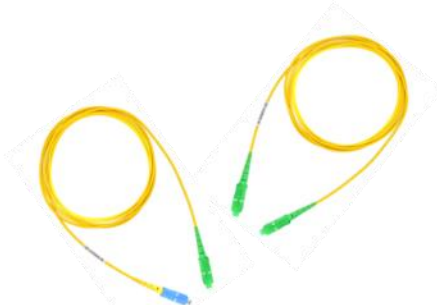
SMAP G2 Cassette Style PLC Splitters



SMAP G2 Modular Panel Solutions



SMAP G2 Adapter Plates and Cassettes



Simplex Patch Cords I/O OFNP

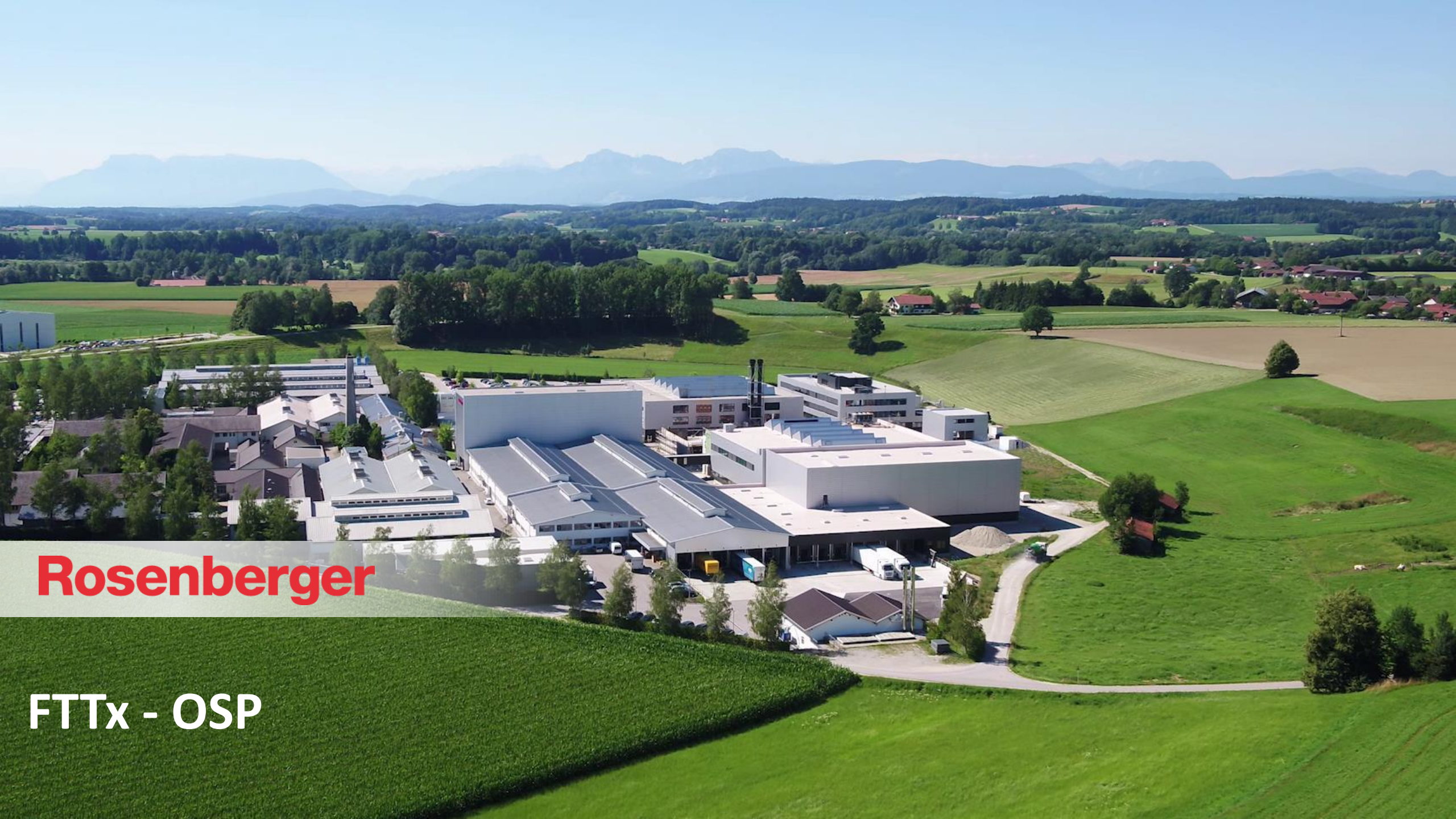


Gen I Flexible Capacity Indoor Fiber Distribution Hub (288F Max)



Indoor Fiber Distribution Units

confidential



Rosenberger

FTTx - OSP



Outdoor Splice Enclosure Solutions



Value Add Pre-Assembled FDUs with
Extended Length Feeder



FTH-9 Zone 4 ODF



Empty Fiber Distribution Units



Indoor and Outdoor Patch Cords



Custom FDU Solutions



RFE IP67 Connector



Fiber Distribution Units with PLC
Splitters



Rosenberger

Enterprise Copper Connectivity Solutions

Keystone Modular Jacks



90° Tool-Less UTP Keystone Jack



Tool-Less F/UTP Keystone Jack



TAA

Cat6A Tool-Less F/UTP Keystone Jack



Standard Keystone UTP Jack



Standard Keystone F/UTP Jack



TAA

Cat6A Tool-Less UTP Keystone Jack

Keystone Modular Patch Panels



48 Port 1RU UTP Copper Patch Panel



24 Port 1RU "W" UTP Copper Patch Panel



24 Port 1RU "W" F/UTP Copper Patch Panel



48 Port 1RU F/UTP Copper Patch Panel



24 Port 1RU UTP Copper Patch Panel



24 Port 1RU Staggered UTP Copper Patch Panel



24 Port 1RU Shuttered F/UTP Copper Patch Panel

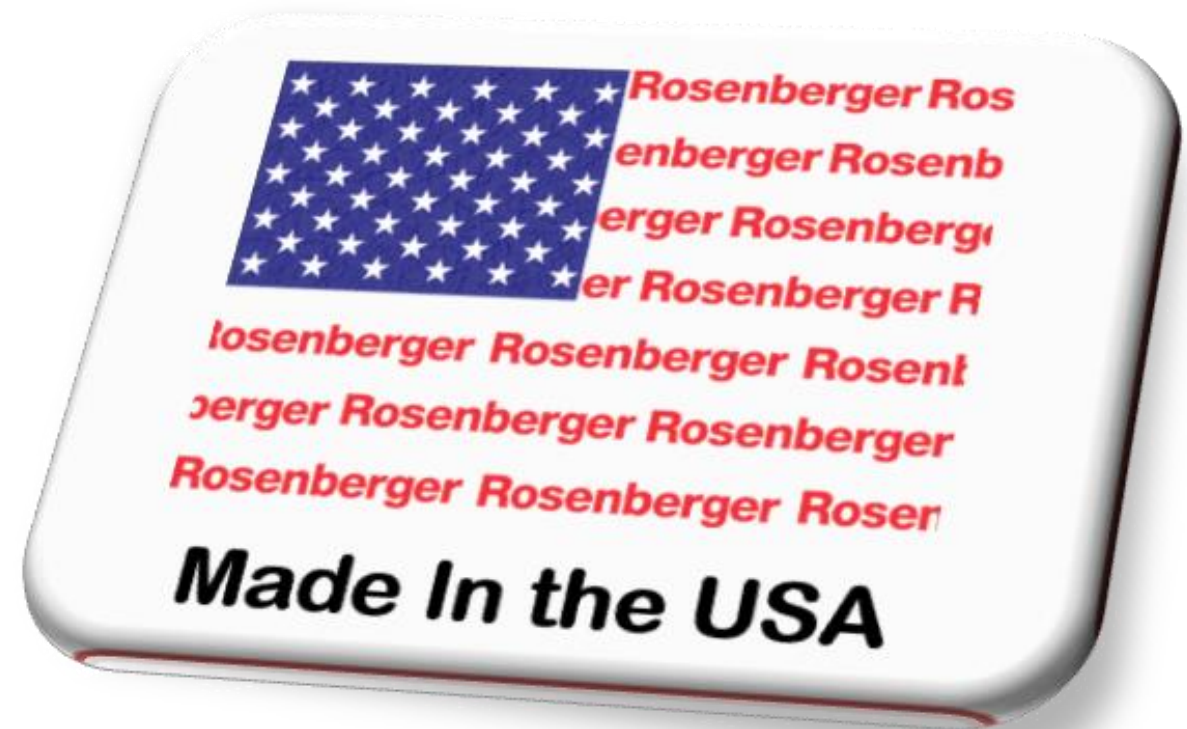


24 Port 1 RU UTP Copper Patch Panel



24 Port 1/2 RU UTP Copper Patch Panel

Category 5e, 6, and 6A Pull Box Cable



Category 5e, 6, and 6A Patch Cords and Outlets



Patch Cords



1 / 2 / 3 / 4 / 6 Port Single Gang Outlet



1 / 2 Port Surface Area Outlet

*Thank
You!*



www.rosenberger.com/us_en

Rosenberger

Sean Kelly, RCDD
Field Application Engineer / Account Manager
Data Center & Enterprise

Rosenberger North America
309 Colonial Drive, Post Office Box 309
Akron, PA 17501

Main: +1 717 578 3990

E-Mail: sean.kelly@rosenbergerna.com