

EBO 3M™ ferrule system for PreCONNECT® solutions

The best of both worlds:
Singlemode and expanded beam connectors

Reliable connectors that can be repeatedly plugged in and unplugged while still maintaining constant performance over all fibers – that is what EBO 3M™ has to offer.

The innovative yet extremely simple structure of this expanded beam systems permits repeated plugging and unplugging with no loss of performance and no need to clean the end faces.
What is more, it is all but insensitive to vibrations and dust. Because the end faces of the fibers do not physically touch one another, the risk of chipping, scratches and damage is eliminated, while simultaneously guaranteeing outstanding IL and RL performance.

In contrast to earlier expanded beam methods, the EBO 3M™ connector uses a new mirror reflex collimation lens in order to expand the light path and overcome the effect of surface particles on the IL and RL performance. Tiny deviations in the fiber alignment in plug connections (lateral offset) are all but eliminated.

This new technology, which has been patented by 3M™, not only permits multimode applications but also makes it possible to use the expanded beam for singlemode applications – something that was not possible in the past, in particular in the case of multiple fibers.

Applications

- Trunk cables for data centers
- Data center patch location
- Data center ToR and EoR distribution
- Multi-link use
- Industry 4.0 applications
- Optical board connections
- Chassis plug connections

The benefits at a glance

- Low sensitivity to dust
- Hermaphrodite ferrules design
- Stable performance
  even after repeated mating cycles
- Low insertion and return loss
  for both singlemode and multimode
- Scalable up to 144 fibers
- Low total cost of ownership
- Forward-looking

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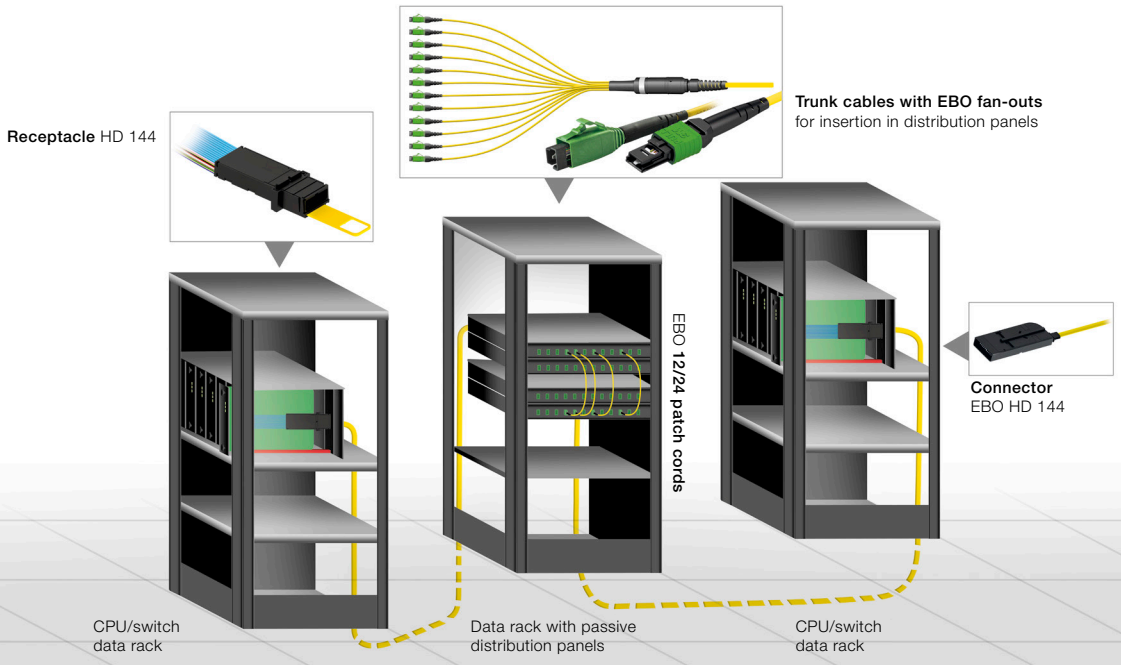
Applications in hyperscale data centers



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Mating cycle test results (singlemode)



Quelle: 3M™

Technical data (example of EBO-12 connector)

Performance	Singlemode (1310nm)	Multimode (850nm)
Fiber type	OS1 | OS2	OM3 | OM4 | OM5
Fibers per ferrule	12	12
Anti-reflection coating central wavelength in nm	1310	850
Optical properties [dB] Insertion Loss max. (IL) max. Return Loss min. (RL) min.	< 0.70 > 55	< 0.30 > 35
Mating cycles	1000	
Plugging | Plug-in forces [N/Ferrule]	approx. 0.7	approx. 0.7
Qualification	Telcordia GR1435 Controlled Environment	



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