

Data Center Verkablungs-Normen

			
	TIA	ISO/IEC	CENELEC
Design (Data Center)	TIA-942	ISO/IEC 11801-5	EN 50173-5
Planning/ Installation		ISO/IEC 14763-2	EN 50174-2
Fiber Testing		ISO/IEC 14763-3	EN 50346
Fiber Testing- Installed Plant			
Multimode Attenuation	TIA-526-7	IEC 61280-4-1	
Single-mode Attenuation	TIA-526-14	IEC 61280-4-2	
Fiber Inspection		IEC61300-3-35	

Glasfaser-Normen

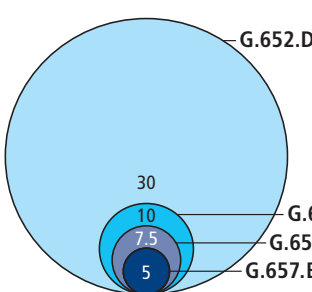
Multimode Fasern

	Attenuation (dB/km)			Effective Modal Bandwidth (MHz/km)		Standards		
	850 nm	1300 nm	953 nm	850 nm	953 nm	TIA	ISO/IEC 60793-2-10:2019	Bend Insensitive
OM3	3,5	1,5	N/A	2000	N/A	TIA-492AAAC-B	A1-OM3a	A1-OM3b
OM4	3	1,5	N/A	4700	N/A	TIA-492AAD	A1-OM4a	A1-OM4b
OM5	3	1,5	2,3	4700	2470	TIA-492AAAE	A1-OM5a	A1-OM5b

Singlemode Fasern

OS Designation	Cabled Fiber Attenuation (dB/km)		
	1310 nm	1383 nm	1550 nm
OS1a	1,0	1,0	1,0
OS2	0,4	0,4	0,4

Faser Biegeradius (mm)



LWL Stecker-Normen

Empfohlene Stecker für DC-Anwendungen:

		
	TIA	ISO/IEC
LC	TIA 604-10	IEC 61754-20
MPO	TIA 604-5 (MPO-12)	IEC 61754-7-1 (Single Row)
	TIA 604-18 (MPO-16)	IEC 61754-7-2 (Dual Row)

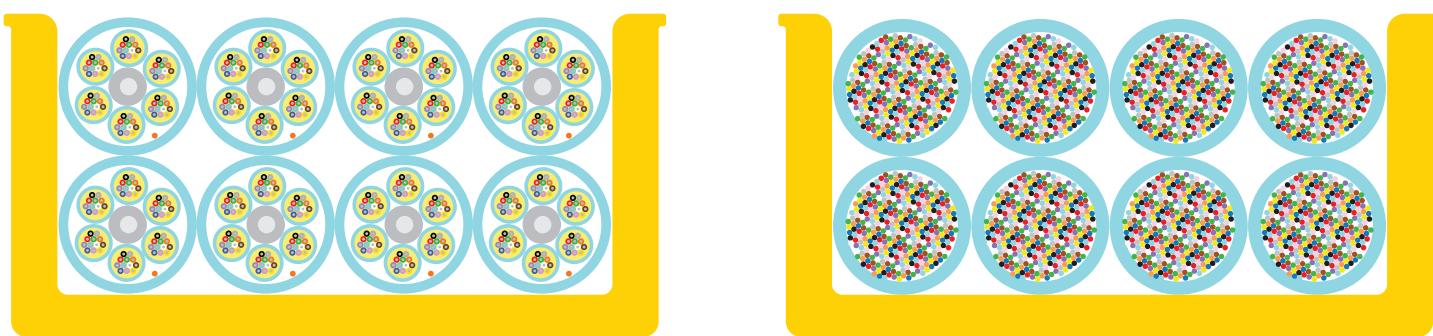
Kommende LWL-Steckverbinder



LWL-Kabel-Planung

Vergleich von Standard Tight-Buffer Kabeln vs.

AFL MicroCore® Cable mit SpiderWeb Ribbon® (SWR®) in Kabeltrassen



Verkablung in Standard Tight Buffer Ausführung (576 Fasern)

Verkablung in AFL MicroCore® Ausführung mit SpiderWeb Ribbon®

Transceiver Form Faktoren

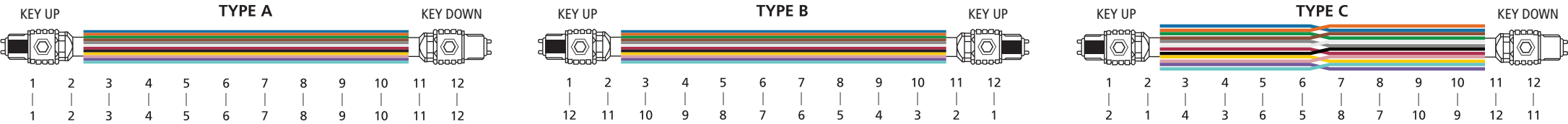
						
MSA	SFP+/SFP28/SFP56	CFP/CFP2/CFP4/CFP8	CXP	QSFP+/QSFP28/QSFP56	QSFP-DD	OSFP
Typical Applications	10G/25G/50G	100G/400G	40/100G	40G/100G/200G	200G/400G	100/200/400G
Connector Interface						
LC	X	X		X	X	X
MPO-12		X		X	X	X
MPO-24		X	X		X	X
MPO-16					X	X
CS					X	X
SN					X	X
MDC					X	X

Ethernet Anwendungen und Dämpfungsbudgets

SPEED	STANDARD	OM3		OM4/OM5		Single-mode (OS1a/OS2)	
		Loss Budget	Distance	Loss Budget	Distance	Loss Budget	Distance
10G	10GBASE-SR	2.6	300 m	2.9	400 m	6	10 km
	10GBASE-LR						
40G	40GBASE-SR4	1.8	70 m	1.5	150 m	6.7	10 km
	40GBASE-LR4					18.5	40 km
	40GBASE-ER4						
50G	50GBASE-SR	1.8	70 m	1.9	100 m	6.3	10 km
	50GBASE-LR						
100G	100GBASE-SR2	1.8	70 m	1.9	100 m	3	500 m
	100GBASE-DR						
	100GBASE-SR4	1.8	70 m	1.9	100 m		
	100GBASE-SR10	1.9	100 m	1.5	150 m		
200G	100GBASE-LR4					6.3	10 km
	200GBASE-SR4	1.8	70 m	1.9	100 m		
	200GBASE-DR4					3	500 m
	200GBASE-LR4					6.3	10 km
400G	400GBASE-SR16	1.9	70 m	1.9	100 m	3	500 m
	400GBASE-DR4					6.3	10 km
	400GBASE-LR8						

Faser Polung

Method	Adapter Orientation	Array Adapter Type	Fiber Order	Duplex Cord Types required at LC/MPO modules	Trunk and Cord Types Required in Parallel Channels
A	Key up/Key down	A (opposed)	Consecutive (1-1, 2-2, etc)	A-to-A + A-to-B	A + B
B	Key up/Key up	B (aligned)	Transposed (1-12, 2-11, etc)	A-to-B	B
C	Key up/Key down	A (opposed)	Pair-flipped (1-2, 2-1, etc)	A-to-B	A + B + C
F	Key Up/Key Down	A (opposed)	Transposed (1-12, 2-11, etc)	A-to-B	B



Relevant für folgende Projekte

