

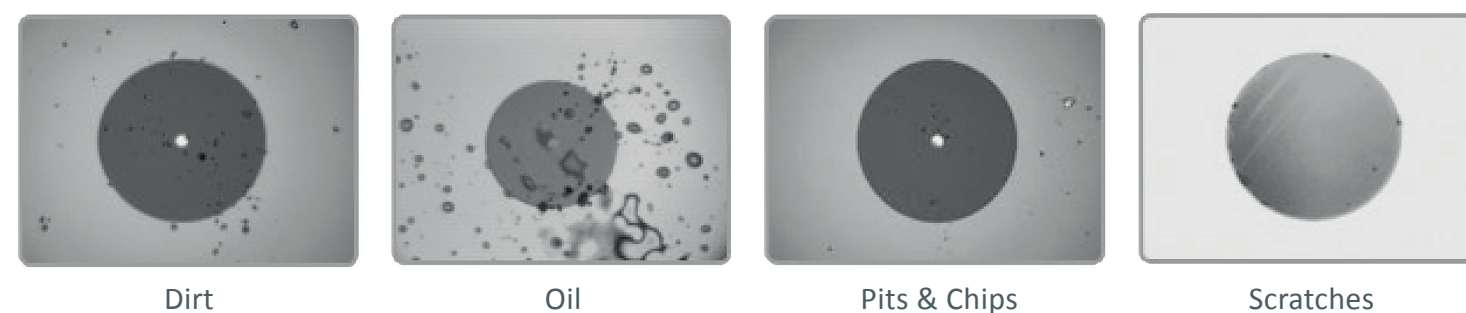
BASICS OF FIBER CERTIFICATION

FIBER INSPECTION



Make sure to have clean connector installed. A dirty connector will increase the power loss! Inspect your connector before and after cleaning.

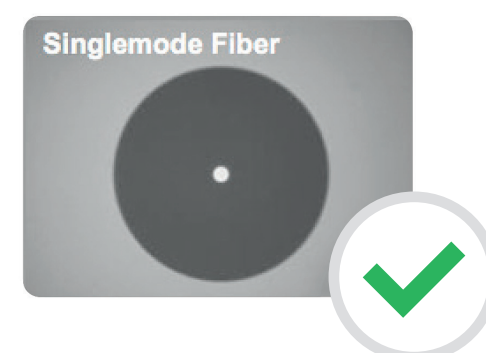
PICTURES OF DIRTY/DAMAGED CONNECTORS



END FACE INSPECTION

- According to IEC 61300-3-35
- Sees dirt on the fiber end faces
- Dirt is the main reason for not working fiber links
- Dirt can destroy the fiber end face
- Always inspect fiber end face before you connect

PICTURE OF CLEAN CONNECTOR



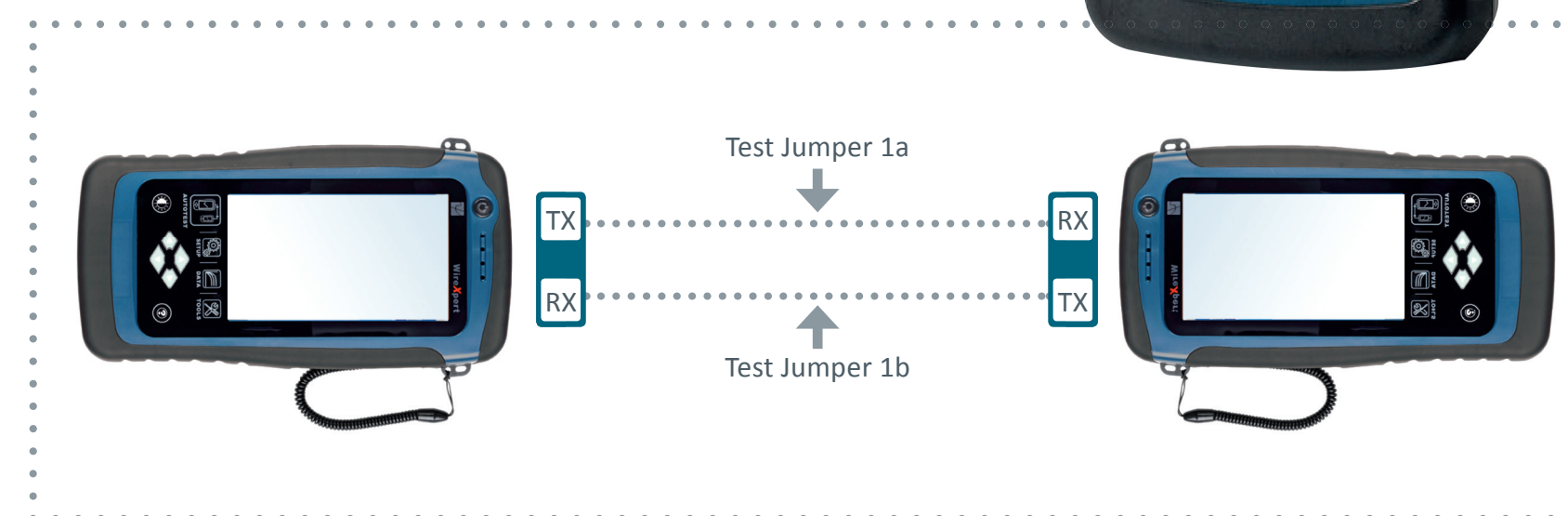
OPTICAL CONNECTOR TYPES

Diameter of Ferrule			
Connector	2.5 mm	1.25 mm	
SC	•		
FC	•		
ST (BFOC)	•		
MTRJ	-	-	
DIN (LSA)	•		
E2000	•		
E2000PS	•		
F3000		•	
LC		•	
MU (Mini-SC)		•	
MPO	-	-	

TIER 1 CERTIFICATION

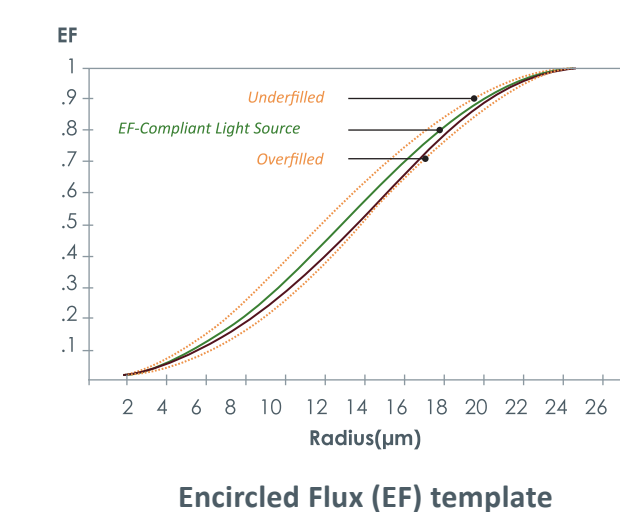
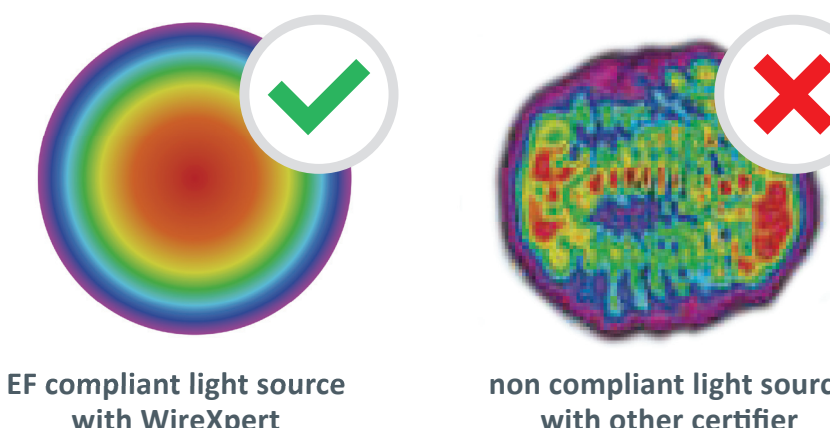
OLTS (OPTICAL LOSS TEST SET)

- Measures the total loss, length, and polarity of a fiber channel
- Conforms to TIA-568-C (TIA-526-14A and TIA-526-7) and ISO 11801 & IEC 14763-3
- Budget Loss testing with LS/PM
- Verify polarity using bi-directional testing or duplex OLTS



Core diameter	62,5				50				9			
Wavelength (nm)	850		1300		850		1300		1310		1550	
Overfilled Launch (MHz*km)	160	200	500	400	500	1500	3500	400	400			
„Laser“ Launch (MHz*km)						2000	4700					
class	OM1				OM2	OM3	OM4	OM1	OM2	OS1/OS2		
	Loss	Length	Loss	Length	Loss	Length	Loss	Length	Loss	Length	Loss	Length
Ethernet												
1G	2.33	26	2.53	33	2.75	2.50	2.32	500	3.43	82	550	
10G	2.60	26	2.50	33	2.75	2.50	2.32	500	3.43	82	550	
40G												
100G												

ENCIRCLED FLUX



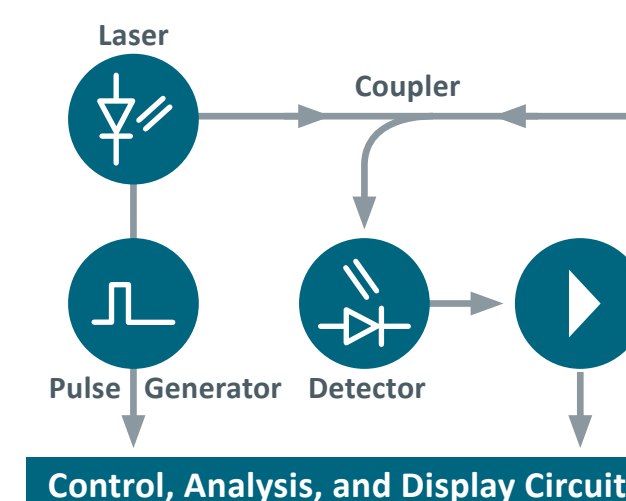
TIER 2 CERTIFICATION

OTDR (OPTICAL TIME DOMAIN REFLECTOMETRY)

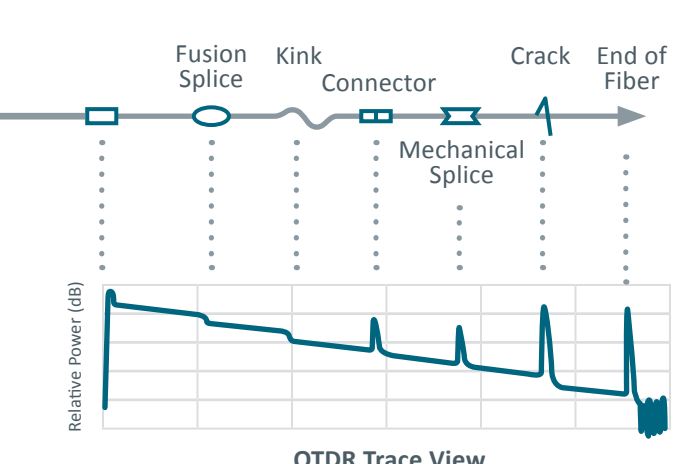
- Provides evidence that cable is installed without degrading events (e.g. bends, connections, splices)
- Conforms to TIA-568-C and ISO 11801 & IEC 14763-3
- Sets optical budgets for each individual event
- Identifies segment lengths, connector locations & losses, as well as losses within segments



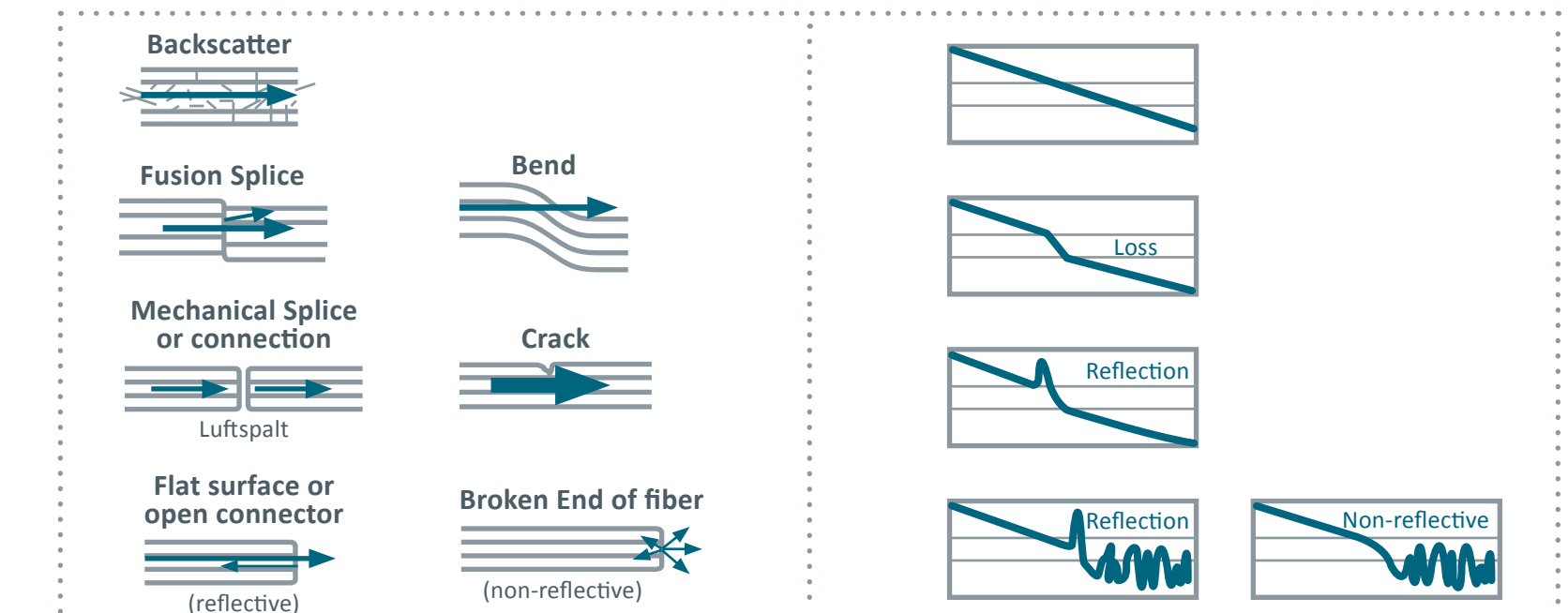
Optical Time Domain Reflectometer



Fiber link



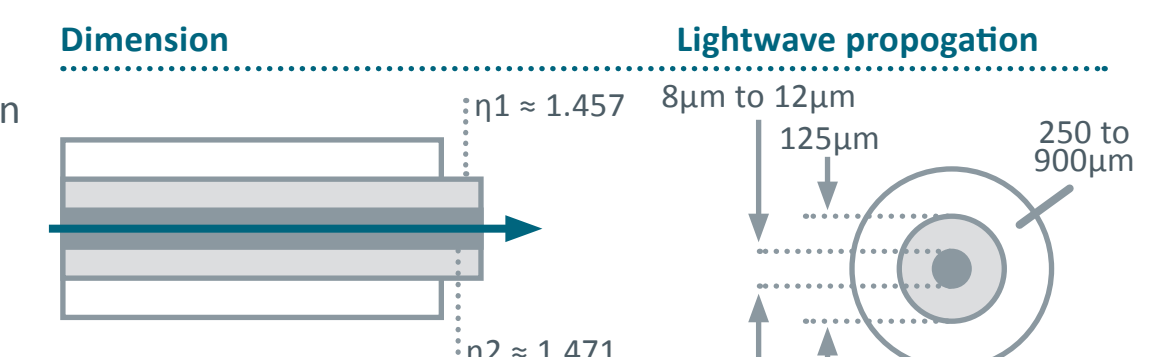
TYPICAL EVENTS



OPTICAL FIBER TYPES

1. SINGLEMODE FIBER

- 1260 to 1640 nm transmission wavelengths
- Low attenuation
- Access/medium/long haul networks (>200km)
- Nearly infinite bandwidth



2. MULTIMODE FIBER

- 850 to 1300 nm transmission wavelengths
- High attenuation
- Local networks (< 2000m)
- Limited bandwidth

