SPECIFICATION

FOR FIBER OPTIC SPLICE CLOSURE

CL1000M/**CL1**000ML

1. GENERAL

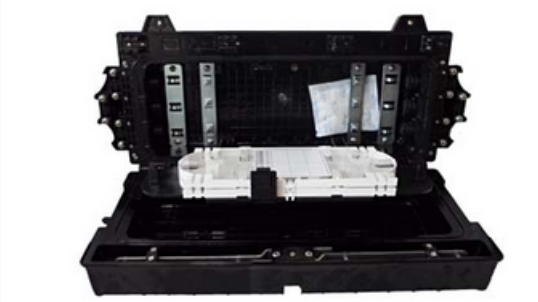
This specification covers the standards and requirements for the properties, testing of the Fiber Optic Splice Closure.

2. Fiber Optic Closure, **CL1**000M/**CL1**000ML

Fiber Optic Closures 1000M/1000ML designed for operational efficiency and scalability are infrastructure solutions for FTTx networks. The closure simplifies FTTx network installation, maintenance and management from central office to the each outside plants.

CL1000 provides for connections between fiber optic cables and passive optical splitters in the outside plant. The closure protects fiber optic splicing point and can be mounted to support aerial, buried and underground applications. CL1000 has high mechanical strength against any environmental conditions and allows rapid network installation.

The special feature of CL1000M/CL1000ML is easy installation applying handle-locking structure which is non-bolt system to closure assembly. One-body structure supports easy and fast installation. The cone type gasket allows adjusting the cable diameter and it completely protects water.



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2.1 Specification

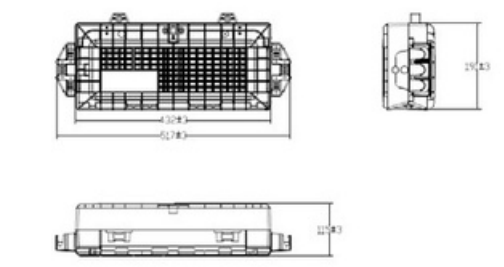


Fig.2 C**L1**000M Drawing

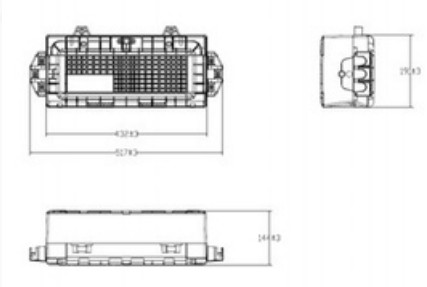


Fig.3 C**L 1** 000ML Drawing

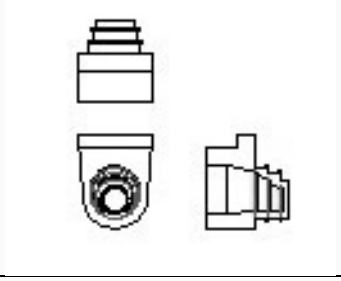
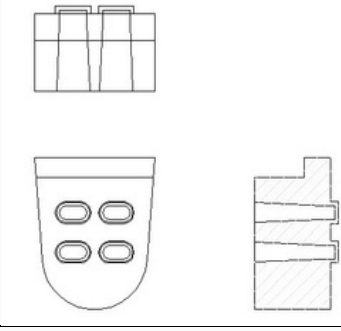
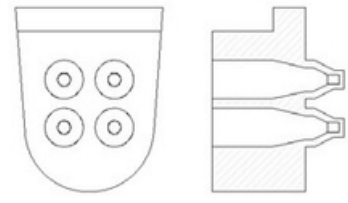
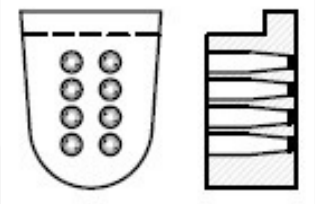
	Parameter	Spec. Value	
		C**L1**000M	C**L1**000ML
General	Dimensions (LxWxH) (mm)	517x 191x 115±3mm	517 x 191 x 144±5mm
Cable entry	In/Out	3/3	
	Cable diameter	8-21mm	
	Splice capacity per tray	24 fibers (Max. 48fibers)	
	No. of splice tray	Max. 4	Max. 8
	Max. Capacity	96C (In case of stacking: 192C)	192C (In case of stacking 384C)
Splice method	Splicing method Splice	Fusion Heat shrinkable	
	protector/method	sleeve	

2.2 Multi-Branch System

Cone type gasket allows to adjust its diameter depending on the cable diameter, and designed to accommodate various number of branches. Multi-branch sheath gasket enable to be designed combination of feeder and drop cables according to the network system. The silicon gasket holds the cable tightly which provides waterproof.

2.2.1 Multiple Gasket

Multiple gasket allows to adjust its diameter depending on the cable diameter, and designed to accommodate various number of branches for feeder, distribution, and drop cables which is necessary for FTTx network.

Type	Gasket Drawing & Picture	Cable entry count/ dia.	Spec.	
			Feeder Cable	Drop Cable
Feeder Gasket		cable entry count	1	-
	Feeder cable gasket	applied cable dia.	8-21mm	-
Drop Gasket		cable entry count		4
	Drop cable gasket	applied cable dia.	4.5x8mm	-
Drop Gasket		cable entry count		4
	Drop cable gasket	applied cable dia.	3-7mm	-
Drop Gasket		cable entry count		8
	Drop cable gasket	applied cable dia.	3~5mm	

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2.3 ADAPTOR APPLICATION

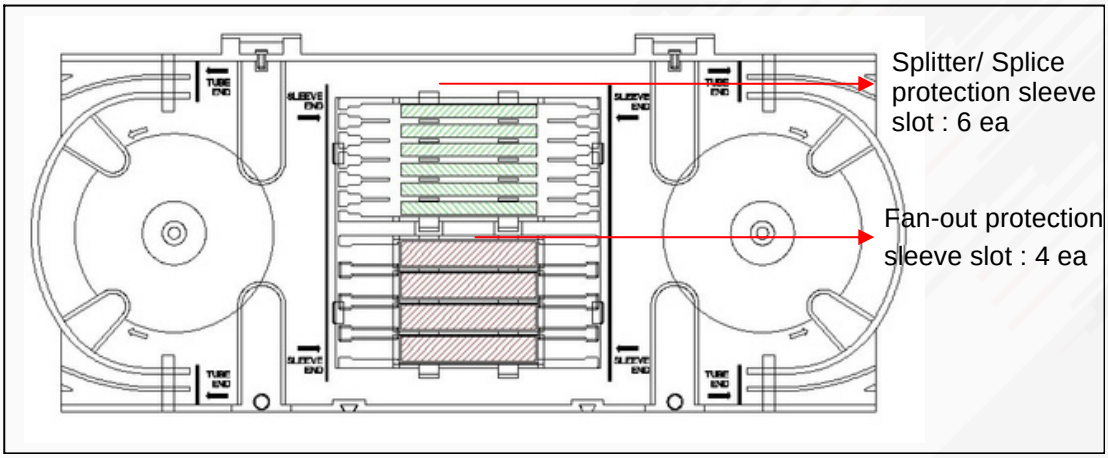
CL1000M / CL1000ML can be used as a terminal closure by using adaptor bulkhead in the closure. Adaptor bulkhead will provide the termination with optical adaptors. And the PLC Splitter can be accommodated in the splitter tray which can be stacked with splice trays. When CL1000M / CL1000ML conforms the terminal closure function, the splice tray will be TB12 or TB24 for splitter integration and the maximum splice capacity of CL1000M / CL1000ML will be changed as below table.

Fig.4 C**L1** 000ML with adaptor

No. of SC Adaptor	Max. No. of Splice Tray	
	C**L1**000M	C**L1**000ML
2 Simplex SC 4	3 3	5
Simplex SC 8	3 2	5
Simplex SC 12	1	5
Simplex SC 16	N/A	4
Simplex SC 32		4
Simplex SC		1

- Splitter Storage Tray

Parameter	Unit	Splitter Splice Tray
Splice type	-	Splitter/ Fusion Splitter/ Splice
Capacity	ea	protection sleeve slot : 6 Fan-out slot : 4



- Splitter Specification

Description	1x2	1x4	1x8	1x16	1x32
Operating Wavelength	1260-1640nm				
Insertion Loss(Max. dB)	4.2	7.5	11.0 0.8	14.0	17.4
Uniformity(Max. dB)	0.6	0.6		1.2	1.5
Polarization Dependent Loss(Max. dB)	0.2	0.2	0.2	0.3	0.3
Return Loss SC/APC (dB)	≥55				
Operating Temp. Range	0℃ to 60℃				

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3. Test Report

ELECTRICAL/MECHANICAL/ENVIRONMENTAL/MATERIALS PERFORMANCE

Performance test procedure (Refer to TELCORDIA GR-771)

ITEMS	BRIEF TEST METHOD AND ACCEPTANCE CRITERIA
Sheath Retention Test	# Test Procedure - Keeping the closure at the -18℃ for 2 hours - Compare the optical losses after applying an axial load of D/45kg*100 to each cable for 30min. (D: Cable Sheath Diameter)before/after cable clamping. - Repeat the test in case of +40℃ # Acceptance Criteria - No greater than ± 0.05dB optical loss variation - No mechanical damage to the cable or closure
Cable Flexing Test	# Test Procedure - Keeping the closure at the -18℃ for 2 hours - Compare the optical losses after applying 10kg (22lb) and rotating the closure 90° every 5 minutes for 8 times (720°) - Repeat the test in case of +40℃ # Acceptance Criteria - No mechanical damage to the cable or closure

Vertical Drop Test	# Test Procedure - Keeping the closure at the -18℃ for 2 hours - Drop the closure onto a steel plate at the height of 75cm (29.5 inch) - Repeat the test in case of +40℃ # Acceptance Criteria - No mechanical damage such as cracks or fractures
Compression Test	# Test Procedure - Keeping the closure at the -18℃ for 2 hours - Compare the dimension before/after applying the weight of 90 Kg for 15min - Repeat the test in case of +40℃ # Acceptance Criteria - Less than 20% deformation - Less than 10% of permanent deformation - No mechanical damage to the closure
Impact Test	# Test Procedure - Keeping the closure at the -18℃ for 2 hours - Impact the surface of the closure using the impact device (2kg) - Repeat the test in case of +40℃ # Acceptance Criteria - No mechanical damage such as cracks or fractures
Transportation Vibration Test	# Test Procedure - Vibrate (5~55 Hz) the packaged closure on the vibrator for 30 minutes in each axis # Acceptance Criteria - No mechanical damage
Water Immersion Test	# Test Procedure - Place the closure into the 1.5 m water tank for 7 days # Acceptance Criteria - No presence of water ingress
Chemical Resistance Test	# Test Procedure - Submerge the 4 closures and 4 dogbone samples into the solutions for 7 days (pH2 HCL, pH12 NaOH, 10% Igepal)- Compare the surface and tensile strength before/after the submerging # Acceptance Criteria - No change in mechanical integrity or sealing ability - No presence of water ingress - Change of Tensile Strength ≤20%

4. PACKING AND MARKING

4.1 Packing

4.1.1 The fiber optic closure shall be well packed in individual box. 4.1.2 The fiber optic closure shall have necessary accessory for installation, i.e. user manual etc. 4.1.3 Each fiber optic closure is to be packed with a protective material.

4.2 Marking

Details given below shall be distinctly marked with a weather proof material on the both outer sides of the shipping carton. Other shipping mark is also available if requested by customer.

4.2.1 Product item 4.2.2 Country of origin 4.2.3 Manufacturer’s name and/or trademark 4.2.4 Gross weight 4.2.5 Caution mark, i.e. maximum stacking height