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# MPO Connector

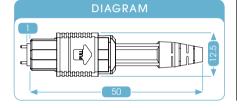
#### **E** Features

- \* Ideal for round, oval and bare ribbon fiber cable assembly
- \* High performance IL & RL
- \* Housing can be removed for re-polishing
- \* Can be un-plugged from adapter with push-pull tab
- \* Diversity Green, Beige, Aqua, Yellow. Black and Magenta are available upon request
- \* Available for 45-degree, 90-degree and flexible boot
- \* IEC 61754-7 and TIA/EIA 604-5 Compliant for MPO/MTP® interfaces
- \* Telcordia GR-1435-Core Compliant

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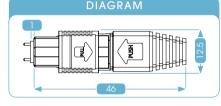
#### **Round Cable**





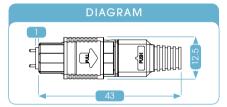
#### Oval Jacket Cable



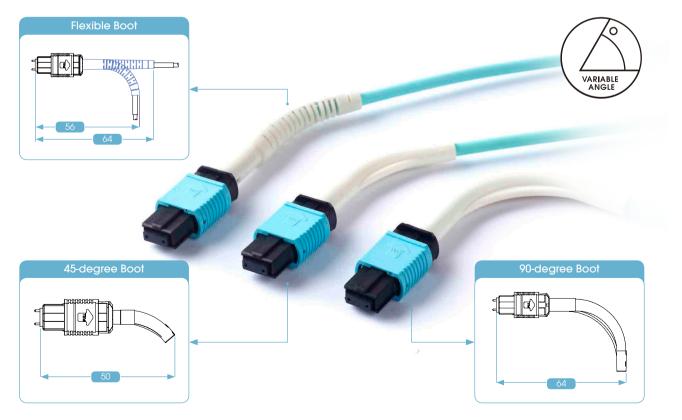


#### Bare Ribbon Fiber





#### **Connector with Angled Boot**









#### Specifications

Item	MPO Connector (4F, 8F, 12F, 24F)	
Mode	Single mode	Multi mode
Durability (50 matings)	< 0.3dB	
Fiber Diameter	9/125um	50/125um & 62.5/125um
Insertion Loss (Typical)	Standard loss 0.25dB (0.5dB for 24F) Low Loss 0.1dB	Standard loss 0.2dB Low Loss 0.1dB
Insertion Loss (Maximum)	Standard loss $\leq$ 0.75dB (1.0dB for 24F) Low Loss $\leq$ 0.35dB	Standard loss $\leq 0.6$ dB Low Loss $\leq 0.35$ dB
Return Loss	APC ≧ 55dB	
Operating Temp. (°C)	-40° <b>C</b> ∼ +75° <b>C</b>	
Storage Temp. (°C)	-40° <b>C</b> ~ +85° <b>C</b>	

<sup>\*</sup> Performance is polish dependent

Part Number	Description
1F401C80015F1	Connector Kits 12F MPO(F) SM Green with Ferrule for 3.0mm Round Cable
1F393C8001EF1	Connector Kits 12F MPO(F) MM Aqua with Ferrule for 3.0mm Round Cable
1F401FS0015F1	Connector Kits 24F MPO(F) SM Green with Ferrule for 3.2mm Round Cable
1F393FS001EF1	Connector Kits 24F MPO(F) MM Aqua with Ferrule for 3.2mm Round Cable

Part Number	Description
1F401BE001502	Connector Kits 12F MPO(F) SM Green with Ferrule for Oval Jacket Cable
1F393BE001E02	Connector Kits 12F MPO(F) MM Aqua with Ferrule for Oval Jacket Cable

Part Number	Description
1F401AF0015F1	Connector Kits 12F MPO(F) SM Green with Ferrule for Bare Ribbon Fiber
1F393AF001EF1	Connector Kits 12F MPO(F) MM Aqua with Ferrule for Bare Ribbon Fiber

<sup>\*</sup> Please contact us for other configurations.

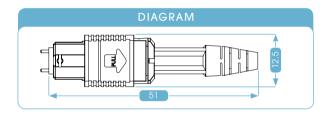
# Connector



- **★**PATENTED★ \* MTX Connector is an unique design by GET; Its POLARITY can be changed without opening the housing or using any special tool
- \* RoHS and Reach Compliant
- \* IEC 61754-7 and TIA/EIA 604-5 Compliant for MPO/MTP®
- \* Telcordia GR-1435-Core Compliant

#### MTX Connector





#### MTX Connector with Push-Pull Tab



#### MTX tool (changer)



#### Step chart















# PO S Connector

GET's Micro MPO Connector is a unique design for ribbons and high density applications. It's the Shortest MPO Connector in the market, its length only 18.1mm. Its Polarity can be changed without opening the housing or using any special tool. GET's Micro MPO Connector is fully compliant with IEC Standard 61754-7 and TIA 604-5 – Type MPO.

unit: mm



- \* Patent No.: Taiwan: M569855/ China: 201821562148.4/ US: US 10,782,486 B2
- \* Micro MPO push-pull tab patent: Taiwan Patent No.: M539725 / China Patent NO.: 201720104614.3
- \* Total length 18.1mm for Bare Ribbon Fiber.
- \* Diversity Green, Beige, Aqua, Yellow. Black and Magenta are available upon request.
- \* Push-pull Tab available.
- \* IEC 61754-7 and TIA/EIA 604-5 Compliant for MPO/MTP® interfaces.
- \* Telcordia GR-1435-Core Compliant.
- \* RoHS and Reach Compliant.

#### Applications

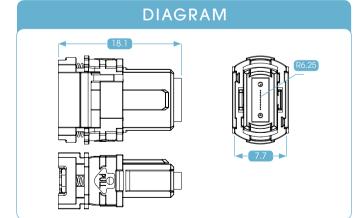
- \* Optical Switching Interframe connections
- \* High Density Rack applications
- \* Data Center applications

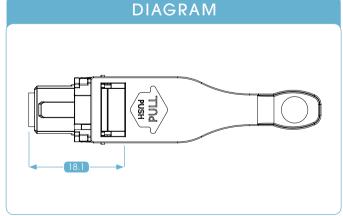
#### **Micro MPO Connector**



# Micro MPO Connector with Push-Pull Tab

unit: mm





4 | MTX Connector

Micro MPO Connector | 5



- \* Short at 27mm long for 3.0mm round cable.
- \* Polarity changeable.
- \* Various boot dimension.
- \* Standard MPO function and performance.

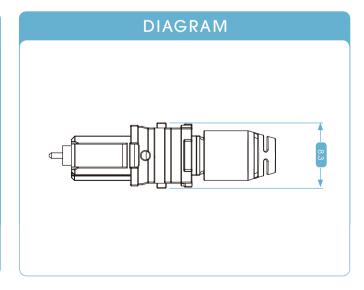
unit: mm

#### Nano MPO Connector





# DIAGRAM



# MPO Loopback

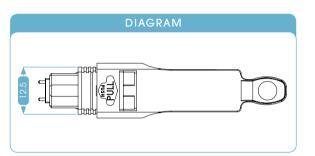


- \* Small, compact housing design
- \* Streamlined, Ruggedized housing design for excellent stability and reliability
- \* Available for 4, 8, 12, 16,24 and 32F
- \* Standard and QSFP application

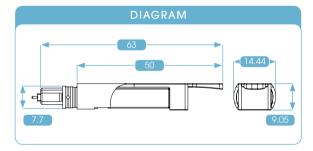
unit: mm

#### MPO Loopback









#### Specifications

#### Insertion Loss: $\leq$ 1dB for MM at 850nm, $\leq$ 1dB for SM at 1310/1550nm

Part Number	Description
1E401000H2	MPO/APC Loopback 12F SM 0dB(STD 1-12)
1E39J000H2	MPO/PC Loopback 12F OM3 0dB(STD 1-12)
1E401000K2	MPO/APC Loopback 24F SM 0dB(STD2 1-13)
1E39J000K2	MPO/PC Loopback 24F OM3 0dB(STD2 1-13)

<sup>\*</sup> Please contact us for other configurations.

6 | Nano MPO Connector

Specifications are subject to change without prior notice.

Specifications are subject to change without prior notice.

# MPO Adapter



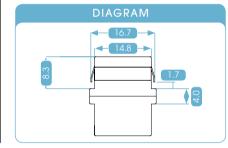
- \* Internal shutter available for dust protection and eye safety
- \* Keyway available for key up or key down
- \* IEC 61754-7 and TIA/EIA 604-5 Compliant for MPO/MTP®
- \* Telcordia GR-1435-Core Compliant

unit: mm

#### Plastic MPO Adapter with Flange







#### Plastic MPO Adapter without Flange







\* Metal die-cast housing resists EMI

#### **Specifications**

Housing	UL-Rated Plastic or Die Cast
Clip & Shutter	Stainless Steel
Durability	< 0.3dB change, 50 mating cycles
Operating Temperature	-40° <b>C</b> ∼ +70° <b>C</b>
Storage Temperature	-40°C~ +85°C

Part Number	Description
13712180A21210201	Plastic MPO Adapter with Flange Key Up to Down
13712180A21240201	Plastic MPO Adapter with Flange Key Up to Down, Internal Shutter
13700110010210201	Metal MPO Adapter with Flange Key Up to Down
13700110010240201	Metal MPO Adapter with Flange Key Up to Down, Internal Shutter

<sup>\*</sup> Please contact us for other configurations.

## MT-MPO Adapter

GET manufactures durable MT-MPO Adapter that provides the function of easy connection and disconnection for MT Ferrule and MPO Connector. Disconnecting operation is provided by pressing and holding Cam to release MT Ferrule. GET's MT-MPO Adapter is fully compliant with IEC Standard 61754-7 and TIA 604-5 - Type MPO.

unit: mm

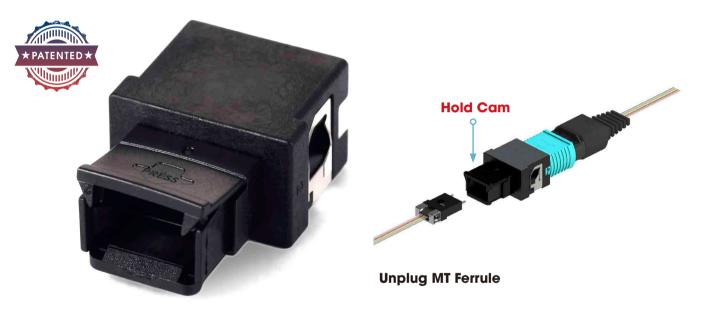
#### **Features**

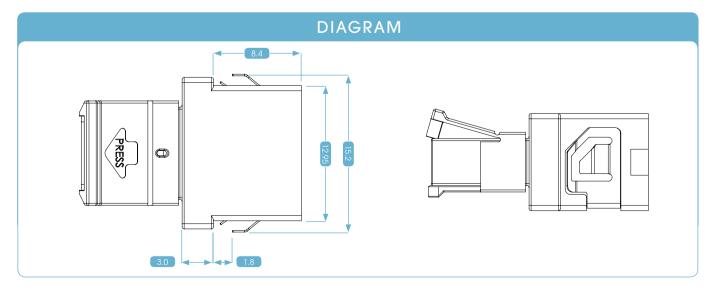
- \* Patent No.: Taiwan: 563094/ China: 201820521832.1/ US: US 10,133,009 B1
- \* Optimized for multi-fiber connector applications.
- \* Easy connection and disconnection.
- \* All adapters compatible with MPO/MTP® connectors and standard MT Ferrules.
- \* Supplied with two non-debris generating dust plugs, one for MT Ferrule, one for MPO.

#### **Applications**

- \* Optical Switching Interframe connections
- \* High Density Rack applications
- \* Data Center applications

#### **MT-MPO Adapter**





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## MTRJ **Reversible Connector**



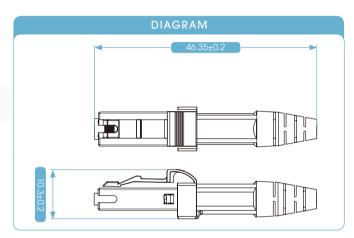


- \* Gloriole's MTRJ Connector meet industrial standard
- \* Available in Round cable, Bare Ribbon and Oval Jacket
- \* Also reversible function available.

unit: mm

#### **MTRJ Reversible Connector**





## MTRJ **Reversible Adapter**

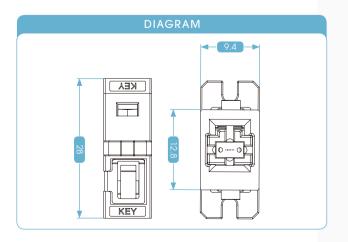




\* Gloriole's MTRJ Adapter meet industrial standard, also available in variety colors with easy reversible function.

unit: mm

#### MTRJ Reversible Adapter





**Stackable Adapter** 

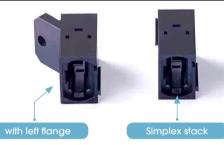
**E** Features

- \* Internal shutter available for dust protection and eye safety
- \* High density application
- \* Keyway available for key up or key down
- \* Durability < 0.3dB change, 50 mating cycles
- \* IEC 61754-7 and TIA/EIA 604-5 Compliant for MPO/MTP®
- \* Telcordia GR-1435-Core Compliant

unit: mm

# Straight Type

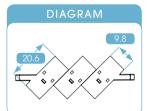
#### **Angled Type**

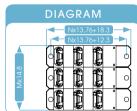






with right flange







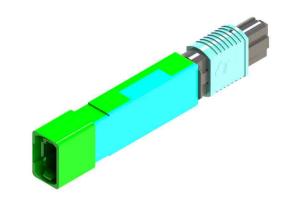
Part Number	Description	
	Straight Type	
	aa: Total ports ex.1x4=04, 2x6=12, 3x8=24	
1N1ggbccx1A1001	b : Row, ex.1=1 row, 2=2 rows	
INTOODCCXTATOOT	cc : Ports per row, ex.4=04, 12=12	
	x : 1=Key Up to Key Down, 2=Key Up to Key Up	
ex: 1x6 MPO Stackable Adapter, Straight Type = 1N10610611A1001		
45° Type		
	<b>aa</b> : Total ports ex.1x4=04, 2x6=12, 3x8=24	
1N2ggbccx1A1001	b : Row, ex.1=1 row, 2=2 rows	
INZUGDCCXIATUUT	co : Ports per row ex 4–04 12–12	

- cc : Ports per row, ex.4=04, 12=12..
- x: 1=Key Up to Key Down, 2=Key Up to Key Up
- ex: 1x4 MPO Stackable Adapter, 45° Type = 1N20410421A1001
- \* Please contact us for other configurations.

# Related Products

unit: mm

**MPO Attenuator** 

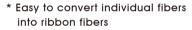


MT - Fiber Array Assembly









\* Reusable



nit: mm

**MPO Ribbonizer** 



Part Number	Description
1H02001	MPO Ribbonizer

# Optical Fiber Flex Circuit

Optical Fiber Flex circuit is designed to optimize complex optical fiber routing with high fiber count, providing system designers real solutions to solve the growing fiber management problems.

**Benefits** 

- \* Simplifies intra-rack fiber management and cabling
- \* Reduces installation time and costs

design

- \* Saves valuable space
  \* Offers flexibility in systems
- \* High fiber count in Racks or on PCB

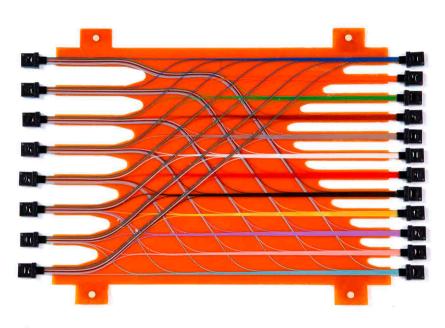
**Features** 

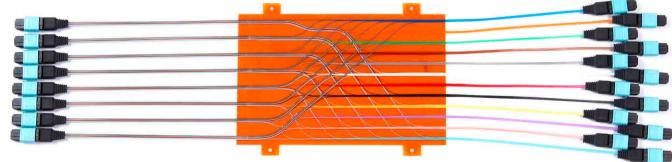
- \* Flexible, thin and light for SM or MM Application
- \* Flame resistant substrate (94V-0 rated)

unit: mm

#### Optical Fiber Flex Circuit







#### Performance

Optical Fiber Nominal OD	250µm
Max. Circuit Dimensions	500mm x 500mm
Max. IL (W/out Connector)	< 0.1dB
Minimum Bend Radius	25mm
Operating Temperature	−25°C ~ +85°C

12 | MPO Related Products & Ribbonizer

Specifications are subject to change without prior notice.

## cal Fiber Flex Circuit



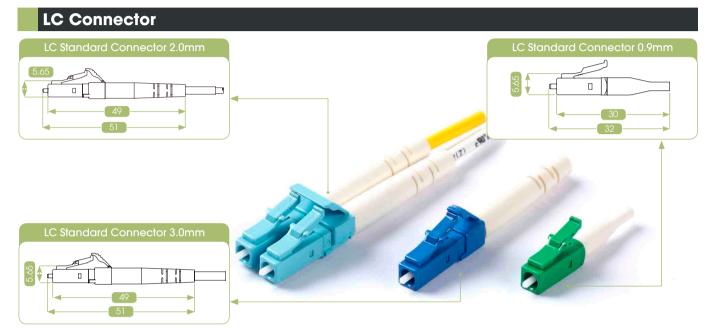


- \* Small Form Factor (SFF) connector
- \* Simplex and Duplex for option
- \* SM/PC, SM/APC and MM/PC versions
- \* 900 $\mu$ m, 2.0mm and 3.0mm versions
- \* Multiple boot color for option
- \* Available for 45-degree, 90-degree and flexible boot

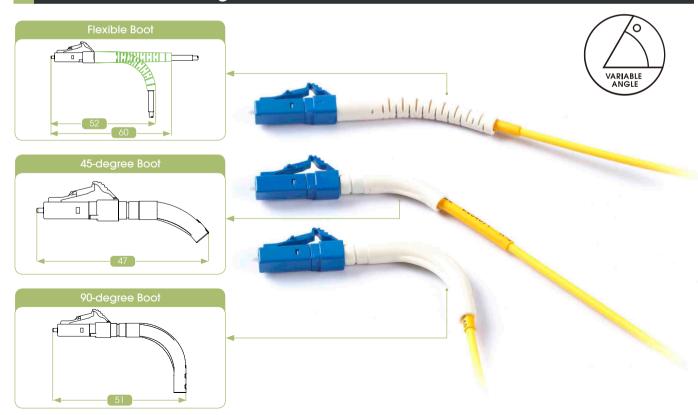
**★PATENTED** 

\* Telcordia GR-326, IEC and TIA/EIA compliant

unit: mm



#### LC Connector with Angled Boot



14 | LC Connector

#### Specifications

Characteristics	Single	Mode	Multi Mode	
Insertion Loss	Premier Grade	A Grade	Premier Grade	A Grade
Insertion Loss	≦ 0.15dB	≦ 0.30dB	≦ 0.15dB	≦ 0.30dB
	PC ≧ 50dB			
Return Loss	UPC ≧ 55dB		-	
	APC ≥ 65dB			
Operating Temperature	-40° <b>C</b> ∼ +75° <b>C</b>			
Storage Temperature	-40°C~ +85°C			

<sup>\*</sup> Performance is polish dependent

Part Number	Description		
	y: 5=PC, 6=APC		
	a: 1=SM, 2=MM, 3=OM3, 4=OM4		
1F1yabc001x01	b: 1=Simplex, 2=Duplex		
	c: 2=900µm, 6=2.0mm, 8=3.0mm		
	x: 3=Blue, 5=Green, E=Aqua, G=Beige, N=Magenta		
ex: Connector Kits LC/PC 2.0mm SM(Blue) Simplex with Ferrule = 1F15116001301			

x. Confideror king Ecyt C 2.orrint dividual) dirtiplex will then

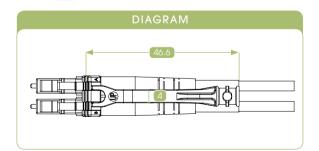
 $\ast$  Please contact us for other configurations.

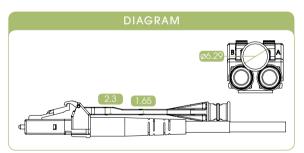
#### **LC Connector with Push-Pull Tab**





- \* Available for Duplex Standard Connector and Unibody Connector
- \* Data Center Application
- \* High Density Application



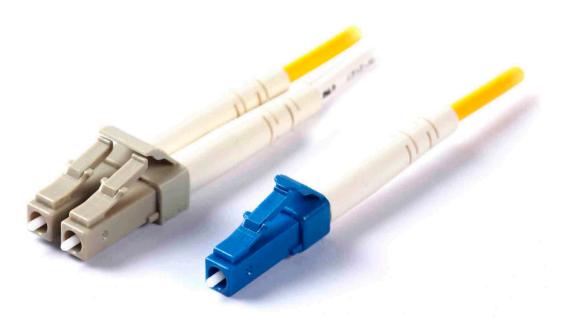


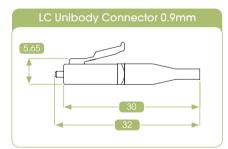


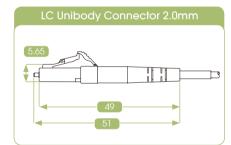
unit: mm

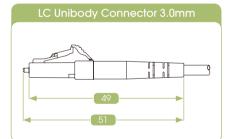
- **E** Features
- \* Unique one-piece design
- \* Low Insertion Loss: 6 direction tuning feature to improve random mating IL
- \* Small Form Factor (SFF) connector
- \* Anti-snag latch for jumper
- \* Available for 0.9mm, 2.0mm, 3.0mm, simplex and duplex
- \* Angled boots available for 45 degree, 90 degree and flexible boot
- \* LC patchcord can be plugged in and removed easily from LC adapter by using push-pull tab
- \* Telcordia GR-326, IEC and TIA/EIA compliant

#### LC Unibody Connector









Part Number	Description	
	y: 0=PC, 1=APC	
	a: 1=SM, 2=MM, 3=OM3, 4=OM4	
1F3yabc001x01	b: 1=Simplex, 2=Duplex	
	c : 2=900µm, 6=2.0mm, 8=3.0mm	
	x : 3=Blue, 5=Green, E=Aqua, G=Beige, N=Magenta	
ex : Connector kits LC/PC Unibody 2.0mm SM(Blue) Duplex with Ferrule =1F30126001301		

\* Please contact us for other configurations.



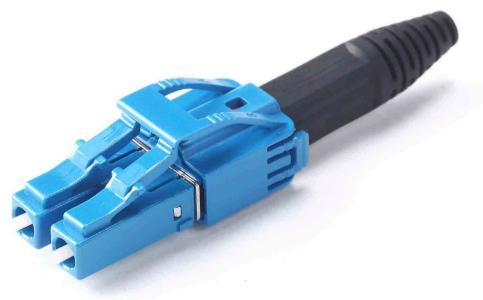
**Features** 

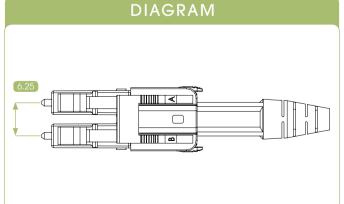
- \* Easy to change connector polarity without any tool
- \* Versatility: pitch change between 6.25mm and 5.25mm
- \* Easy to un-plug from adapter on high dense board with push-pull tab
- \* Uniboot design to decrease cable 50% volume, suitable for data centers application
- \* Telcordia GR-326, IEC and TIA/EIA compliant

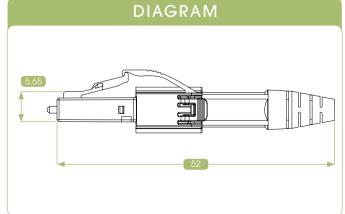
ınıt: mm

#### LCX Connector











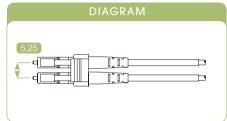


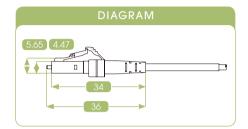
- \* Mini LC Connector Pitch at 5.25mm(Duplex Only)
- \* This connector design is compatible with mini SFP + transceivers
- \* Increases the density
- \* 36mm in length from ferrule tip to boot end
- \* Provides space saving in the network and FTTH application

unit: mm

#### Mini LC Connector







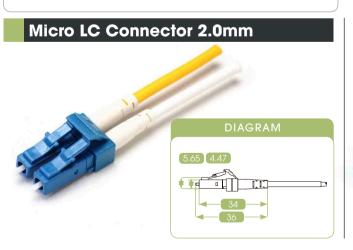
Part Number	Description
1F24126133301	Connector Kits Mini LC/PC 2.0mm SM(Blue) Duplex with Ferrule
1F24226001G02	Connector Kits Mini LC/PC 2.0mm MM(Beige) Duplex with Ferrule

\* Please contact us for other configurations.

# E Connector



- \* Micro LC Connector Pitch at 6.25mm (Available in Simplex and Duplex)
- \* 36mm in length from ferrule tip to boot end
- \* Provides space saving in the network and FITH application





Specifications are subject to change without prior notice.

Part Number	Description
1F27116003301	Connector Kits Micro LC/PC 2.0mm SM(Blue) with Ferrule

st Please contact us for other configurations.

18 | Mini LC Connector & Micro LC Connector





- \* Unique one-piece design
- \* Low insertion loss
- \* Easy installation
- \* Diversity Blue, Green, Beige, Aqua. Black and Magenta are available under request
- \* Internal and external shutter available for dust protection and eye safety
- \* Telcordia GR-326, IEC and TIA/EIA compliant

unit: mm

#### LC Adapter



#### LC Adapter with Shutter



#### Specifications

Housing Color       Green       Blue       Beige/Aqua/Magenta         Main Body Material       UL-Rated Plastic         Sleeve       Zirconia or Phosphor Bronze         Typical Insertion Loss, dB       Zirconia ≤ 0.15dB , Phosphor Bronze ≤ 0.25dB         Durability       < 0.2dB change, 500mating	Mode Type	APC Single Mode Multi Mode			
Sleeve       Zirconia or Phosphor Bronze         Typical Insertion Loss, dB       Zirconia ≤ 0.15dB , Phosphor Bronze ≤ 0.25dB         Durability       < 0.2dB change, 500mating	Housing Color	Green Blue Beige/Aqua/Magenta			
Typical Insertion Loss, dBZirconia $\leq 0.15$ dB , Phosphor Bronze $\leq 0.25$ dBDurability $< 0.2$ dB change, 500mating	Main Body Material	UL-Rated Plastic			
Durability < 0.2dB change, 500mating	Sleeve	Zirconia or Phosphor Bronze			
	Typical Insertion Loss, dB	Zirconia $\leq 0.15$ dB , Phosphor Bronze $\leq 0.25$ dB			
Operating Temperature -40°C~ +75°C	Durability	< 0.2dB change, 500mating			
	Operating Temperature	-40° <b>C</b> ~ +75° <b>C</b>			
Storage Temperature -40°C~ +85°C	Storage Temperature	-40°C~ +85°C			

\* Performance is polish dependent

LC Adapter Simplex Zirconia Sleeve				
	a: 1=PC, 2=APC			
135 <mark>ab</mark> 121c20112502	b : 2=SM, 4=MM			
	c : 3=Blue, 5=Green, G=Beige			
ex : LC/PC Adapter SM(blue) Simplex =	= 13512121320112502			
	LC Adapter Duplex Lucent Type Zirconia Sleeve(one-piece)			
	a: 1=PC, 2=APC			
136 <mark>ab</mark> 261c20112901	b : 2=SM, 4=MM			
	c : 3=Blue, 5=Green, G=Beige			
ex : LC/APC Adapter SM(green) Duplex Lucent Type = 13622261521112901				
LC Adapter with SC Footprint Plastic Clip 25.4mm Zirconia Sleeve(one-piece)				
	a: 1=PC, 2=APC			
136abxy1c20112L11	b : 2=SM, 4=MM			
	x : 2=Duplex, 3=Quad			
	y: 9=with flange, A=without flange			
	c : 3=Blue, 5=Green, G=Beige, E=Aqua			
ex: LC/PC Adapter SM(Blue) Duplex with Flange SC Footprint Type = 13612291320112L11				

\* Please contact us for other configurations.

LC Adapter | 19

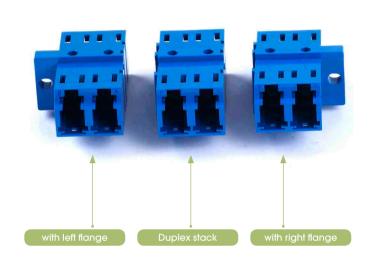
# LC Stackable Adapter

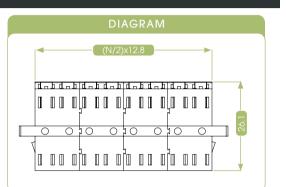
**E** Features

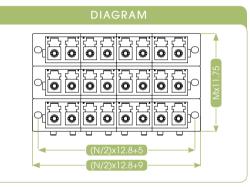
- \* Ultra Flexible Can stack multiple rows \* PATENTED \* and columns and completely fulfill the request
- \* High Density 1U chassis can accommodate 180 ports LC adapters
- \* Diversity Blue, Green, Beige, Aqua. Black and Magenta are available under request
- \* RoHS and Reach Compliant
- \* Telcordia GR-326, IEC and TIA/EIA compliant

unit: mm

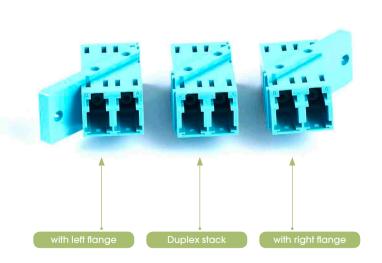
#### Straight Type

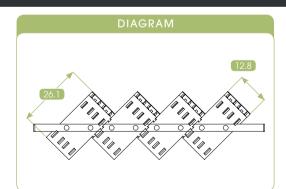


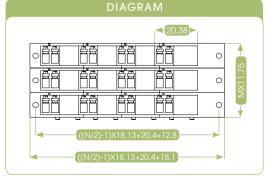




#### **Angled Type**

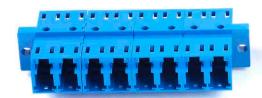






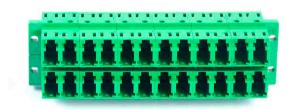
#### Specifications are subject to change without prior notice.

#### Straight Type

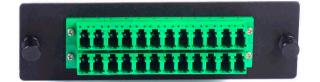




**Angled Type** 

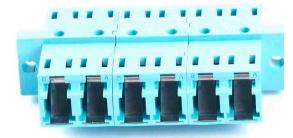








#### **LC Stackable Adapter with Shutter**





T GITT T GITTING OT	Tan Hamber			
Straight Type Zirconia Sleeve				
	aa : Total ports ex.1x4=04, 2x6=12, 3x8=24			
1N1aabcc01y2001	b: Row, ex.1=1 row, 2=2 rows			
TIVI CODECCOTY 2001	cc : Ports per row ex.4=04, 12=12			
	y: 3=Blue, 5=Green, E=Aqua, G=Beige			
ex: 1x6 LC Stackable Adapter SM(Blue), Straight Type = 1N1061060132001				
45° Type Zirconia Sleeve				
	aa : Total ports ex.1x4=04, 2x6=12, 3x8=24			
1N2aabcc01y2001	b : Row, ex.1=1 row, 2=2 rows			
	c: Ports per row, ex.4=04, 12=12			
	y : 3=Blue, 5=Green, E=Aqua, G=Beige			
ex: 1x6 LC Stackable Adapter MM(Aqua), 45° Type = 1N20610601E2001				

\* Please contact us for other configurations.

PATENTED 7

**E** Features

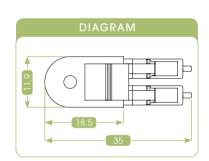
- \* Precise attenuation value
- \* Excellent reflectance
- \* Flawless end face
- \* Compact design

unit: mm

LC Loopback







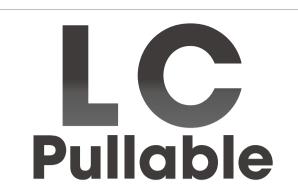
#### Specifications

Specifications		Value		
Item		Single Mode	Multi Mode	
Wavelength		1310nm and 1550nm	850nm for 1~6dB	
		1310nm or 1550nm	850nm/1300nm for 0dB	
Attenuation Range		0dB ~ 25dB	0dB ~ 6dB	
	0 dB	≦ 1dB	≦ 1dB	
Attenuation Variation	1~10dB	±1dB	≤ 6dB ±1dB	
	11~25dB	±15%	-	
PC		≥ 45dB		
Reflectance	UPC	≥ 50dB	F	
	APC	Super $\ge$ 60dB ; Ultra $\ge$ 65dB		
Operation Temperature		-40° <b>C</b> ~ 75° <b>C</b>	-40° <b>C</b> ∼ 75° <b>C</b>	
Storage Temperature		-40°C~ 85°C	-40° <b>C</b> ~ 85° <b>C</b>	

<sup>\*</sup> Performance is polish dependent

Part Number	Description
1E15100041	LC/PC Loopback SM 0dB
1E15J00041	LC/PC Loopback OM3 0dB

<sup>\*</sup> Please contact us for other configurations.



- **E** Features
- \* Easy Snap in seconds
- \* Reduce installation time and cost for FTTH
- \* IP rating
- \* For small count delivery application
- \* Re-useable pulling eye
- \* GR-326 tested and certified

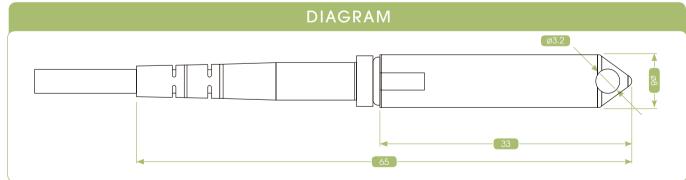
unit: mm

#### LC-Pullable Connector



#### **LC-Pullable Connector- Assembled**







- \* Ideal for the FTTH application
- \* Shield laser and dust for protection
- \* Availble in 0.9mm, 2.0mm and 3.0mm
- \* Highly Reliable and Stable



\* Easy Snap in seconds

**Features** 

\* Reduce Installation time and cost for FTTH

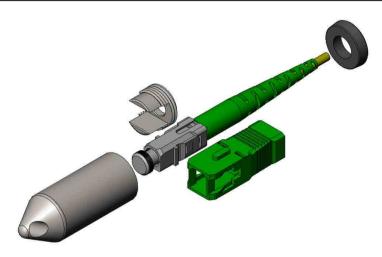
**★PATENTED**★

- \* For small count delivery application
- \* Re-usable Pulling eye
- \* GR-326 tested and certified

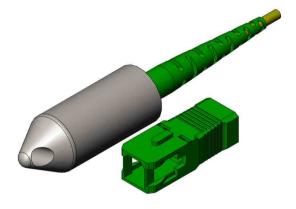
unit: mm

#### SC-Pullable Connector

S C Pullable



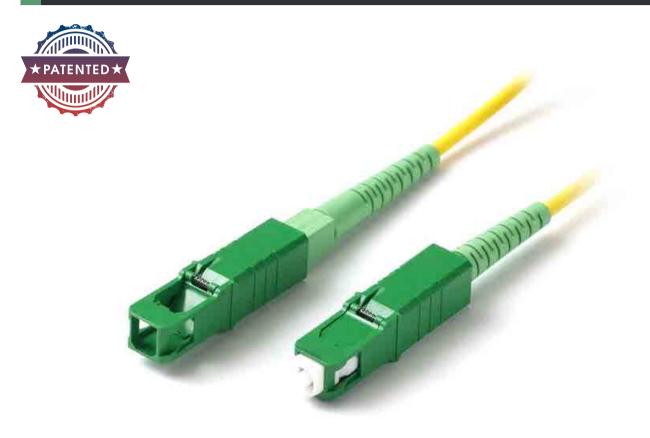
#### **SC-Pullable Connector- Assembled**



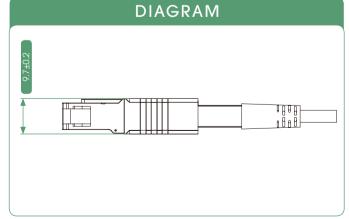
# DIAGRAM

#### unit: mm

#### SC Connector with Shutter



# DIAGRAM 65.2±0.2 37.2±0.2



24 | SC Pullable

SC Shutter | 25



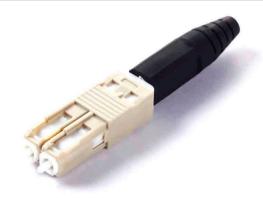
- \* High precision alignment
- \* Low Insertion Loss and High Return Loss
- \* Easy installation
- \* Compack design and High-density package
- \* Uniboot design to decrease cable 50% volume, suitable for data centers application

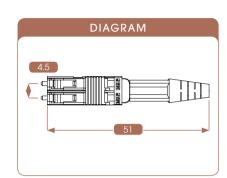
**★PATENTED**★

- \* Telcordia GR-326, NTT & JIS compliant
- \* SM/PC, SM/APC and MM/PC versions

unit: mm

#### **MU Uniboot Connector**

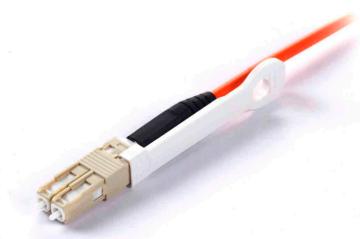




Part Number	Description	
1F81a28001x01	a: 1=SM, 2=MM	
	x : 3=Blue, 6=Brown, G=Beige	
ex : Connector Kits MU(UNIBOOT) 3.0mm SM(Brown) Duplex with Ferrule = 1F81128001601		

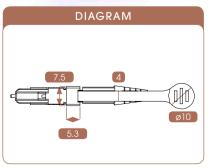
\* Please contact us for other configurations.

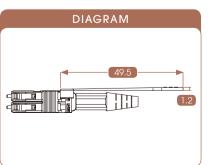
#### **MU Uniboot Connector with Push-Pull Tab**





- \* Can be un-plugged from adapter with push-pull tab
- \* Data Center Applications
- \* High Density Applications









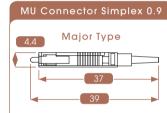


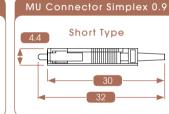
- \* Small form factor
- \* High precision alignment
- \* Low Insertion Loss and High Return Loss
- \* Easy installation
- \* Compact design and High-density package
- \* 900 $\mu$ m, 2.0mm and 3.0mm versions
- \* Simplex and Duplex connector housing available
- \* Telcordia GR-326, NTT & JIS compliant

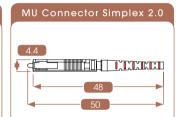
unit: mm

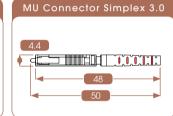
#### MU Connector











#### Specifications

Characteristics	Single	Mode	Multi Mode	
Insertion Loss	Premier Grade A Grade		Premier Grade	A Grade
Il ise illori Loss	≦ 0.15dB	≦ 0.30dB	≦ 0.15dB	≦ 0.30dB
	PC ≥ 50dB			
Return Loss	UPC ≥ 55dB		-	
	APC ≧	€ 65dB		
Operating Temperature	-40° <b>C</b> ∼ +75° <b>C</b>			
Storage Temperature	-40°C~ +85°C			

\* Performance is polish dependent

Part Number	Description		
	y : 8=PC, 9=APC		
	a: 1=SM, 2=MM		
1F4yabc001x01	b: 1=Simplex, 2=Duplex		
	c : 2=900µm, 6=2.0mm, 8=3.0mm		
	x : 3=Blue, 5=Green, 6=Brown, G=Beige		
ex : Connector Kits MU/PC 900µm SM(Brown) Simplex with Ferrule = 1F48112001601			

\* Please contact us for other configurations.



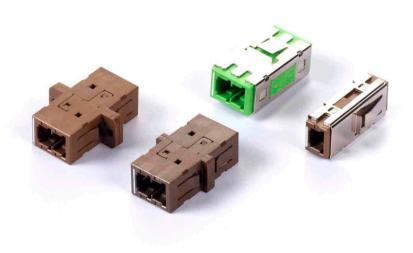


- \* High precision alignment
- \* Easy installation
- \* Simplex and Duplex versions for your option
- \* Duplex with internal shutter for SC footprint application
- \* RoHS and Reach Compliant
- \* Telcordia GR-326, NTT & JIS compliant

unit: mm

#### **MU Adapter**

MU Adapter with Shutter





Part Number	Description			
	MU Adapter Standard Type Zirconia Sleeve			
139abx21c20210C01	a: 1=PC, 2=APC			
	b: 2=SM, 4=MM			
	x : 1=Simplex, 2=Duplex			
	c : 5=Green, 6=Brown			
ex : MU/PC Adapter SM(Brown) Simplex = 13912121620210C01				

MU Adapter Duplex with SC Footprint Zirconia Sleeve		
139 <mark>ab2</mark> y1c20110C01	a: 1=PC, 2=APC	
	b : 2=\$M, 4=MM	
	y: 9=with flange, A=without flange	
	c : Green, 6=Brown	
ex : MC/PC Adapter SM(Brown) Duplex with Flange SC Footprint Type = 13912291620110C01		

\* Please contact us for other configurations.





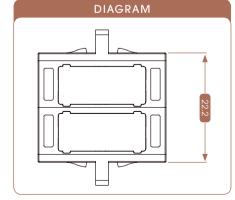


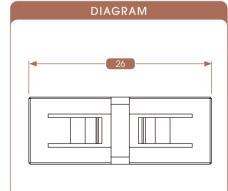
- \* Ultra Flexible
- \* Stackable multiple rows and columns
- \* High Density
- \* Variety Colors
- \* New One Piece Design, stronger and stable

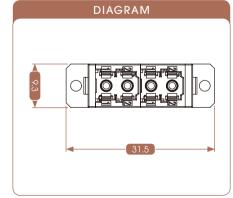
unit: mm

#### MU One-Piece Stackable









## **H Connector Series**

# HOptic

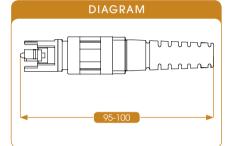


- \* Unique Product USA Patent no. US 9,016,954 B2 & European Patent no. 2592452
- \* Design and Test meets Telcordia GR-3120 -Core Requirements
- \* Complies with GR-326-Core and RoHS
- \* Meets IP 68 dust and water protection (3 meters/7 days) Ratings
- \* 500 minimum mating cycles
- \* Suitable for Outdoor and Indoor Applications

unit: mm

#### **HOptic Connector Plug Type**





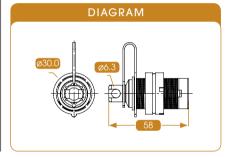




#### **HOptic Receptacle**

**★PATENTED**★





#### **HOptic Connector Plug Type + HOptic Receptacle**







#### HOptic Connector In-line Receptacle Type + HOptic Connector Plug Type

To eliminate indoor/outdoor transition boxes when connecting to indoor ONTs.







#### **Specifications**

Parameters	Specifications	
Connector Types	SC, LC Duplex	MT
Insertion Loss	≤ 0.30dB	≤ 0.75dB
Return Loss	≥ 50dB (PC), 55dB (UPC), 60dB (APC)	≥ 50dB (APC)
Operation Temperature	-40 °C to 70 °C	
Storage Temperature	-40 °C to 85 °C	

# **H** Connector Series

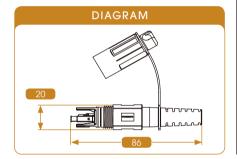


- \* Unique Product USA Patent no. US 10,908,365 B2; US 11,125,952 B2
- \* Design and Test meets Telcordia GR-3120 -Core Requirements
- \* Complies with GR-326-Core and RoHS
- \* Meets IP 68 dust and water protection (3 meters/7 days) Ratings
- \* 500 minimum mating cycles
- \* Suitable for Outdoor and Indoor Applications

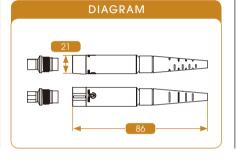
unit: mm

#### **LC-H Connector Plug Type**





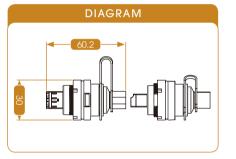
# LC-H In-line Receptacle Type



#### LC-H Bulkhead Receptacle Type

**★PATENTED**★





#### LC-H Connector Plug Type + LC-H Bulkhead Receptacle Type







#### LC-H Connector Plug Type + LC-H In-line Receptacle Type

To eliminate indoor/outdoor transition boxes when connecting to indoor ONTs.









#### **Specifications**

Parameters	Specifications Specification Specification Specification Specification Specification Specification Specificatio	
Connector Types	SC, LC Duplex	MT
Insertion Loss	≦ 0.30dB	≦ 0.75dB
Return Loss	≥ 50dB (PC), 55dB (UPC), 60dB (APC)	≥ 50dB (APC)
Operation Temperature	-40 °C to 70 °C	
Storage Temperature	-40 °C to 85 °C	

\* Macro/Micro Cell and

#### Features \_\_\_\_\_ Applications \* Modular and

BSS in 4G LTE-A & 5G

Automation for industry

#### **IP Connector Series**

Gloriole's LC-IP Connector is designed to provide an outdoor LC-based sealed connection to a board mounted SFP within a sealed enclosure.

**LC-IP Connector Plug Type** 

unit: mm

- **Features**
- \* Bird proof and rodent resistant
- \* IP68 water and dust protection
- \* Available with singlemode or multimode fiber
- \* 500 minimum mating cycles
- \* Operating temperature: -40° to 85°C
- \* RoHS compliant
- \* Bayonet mating style

#### proof interface

**Benefits** 

Blind mate and scoop

- Mates to standard LC simplex or duplex assemblies
- Easily installs without special tooling
- No internal jumper needed

LC-IP Bulkhead Receptacle Type

Direct connect to active device (SFP, SFP+, RJ)

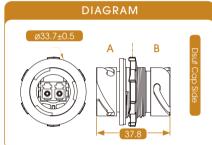
unit: mm

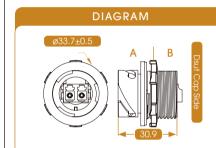
enclosure

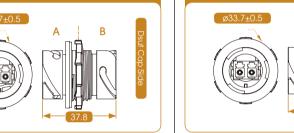
#### **LC-IP In-line Receptacle Type**











#### LC-IP Connector Plug Type + LC-IP Bulkhead Receptacle Type









#### LC-IP Connector Plug Type + LC-IP In-line Receptacle Type

To eliminate indoor/outdoor transition boxes when connecting to indoor ONTs.









#### **Specifications**

The system is designed to provide IP67 dust and water protection when connector and receptacle are mated or with dust caps installed.
Plug cap includes integrated pulling eye for easy installation. Gloriole's LC-IP assemblies are exceptionally suited for WiMax, LTE, wireless, wireless backhaul and base station applications.

ITEM	LC-IP Connector Plug Type		
Mode Type	Single Type	Multi Type	
Insertion Loss	P Grade ≤ 0.15dB, A Grade ≤ 0.3dB		
Return Loss	≥ 50dB(°C), 55dB(UPC), 60dB(APC)	X	
Durability	< 0.2dB change, 500 mating		
IP Rating	IP68		
Operation Temp.(°C)	-40°C~ +85°C		

**MT-IP Connector Plug Type** 

**IP Connector Series** 

Gloriole's MT-IP series product are designed to provide

outdoor sealed connection in multi-fibers to mate sealed







MT-IP In-line Receptacle Type

bavonet style

installation

durability

matina easy to field

\* Minimum 500 cycles mating

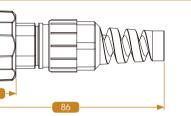
\* IEC 61076-3-106 interface

\* RoHS REACH compliant

MT-IP Bulkhead Receptacle Type



#### **DIAGRAM**





#### MT-IP Connector Plug Type + MT-IP Bulkhead Receptacle Type







#### MT-IP Connector Plug Type + MT-IP In-line Receptacle Type

To eliminate indoor/outdoor transition boxes when connecting to indoor ONTs.







#### **Specifications**

The series product provides IP68 grade dust and water proof requirement; resistant to chemical and gasses corrosion in harsh environments.

With ODVA compatible design, MT-IP series product widely used in many industrial applications: LTE, industrial automation and outdoor distributed antenna system.

ITEM	MT-IP Connector Plug Type	
Mode Type	Single Type	Multi Type
Insertion Loss	Standard $\leq$ 0.15dB, Low loss $\leq$ 0.35dB	≦ 0.6dB
Return Loss	≥ 55dB( <b>APC</b> )	X
Durability	< 0.3dB change, 500 mating	
IP Rating	IP68	
Operation Temp.(°C)	-40°C~ +75°C	
Storage Temp.(°C)	-40°C~ +85°C	

#### **IP Connector Series**

# SC-IP

Gloriole's SC-IP Connector is designed to provide an outdoor SC-based sealed connection to a board mounted SFP within a sealed enclosure.

unit: mm

#### **E** Features

- \* Field Installable
- \* Meet IP68 ratings
- \* IEC60603-7 Standard
- \* Harsh Environment Application
- \* Simple Connection

#### Benefits

- \* Blind mate and scoop proof interface
- \* Mates to standard SC simplex or duplex assemblies
- \* Easily installs without special tooling
- No internal jumper needed
- \* Direct connect to active device (SFP, SFP+, RJ)

unit: mm





- \* Removable Cover from 1U
- \* Easy Installation and adjustment in the rack
- \* High density Flexibility
- \* Quick and easy polarity management
- \* Easier access to module and panels
- \* Reduce congestion in high Density environment.

SC-IP in-line Receptacle



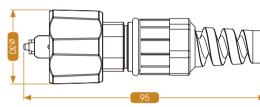




DIAGRAM







#### SC-IP Connector Plug Type + LC-IP Bulkhead Receptacle Type









#### SC-IP Connector Plug Type + LC-IP In-line Receptacle Type

To eliminate indoor/outdoor transition boxes when connecting to indoor ONTs.









#### Specifications

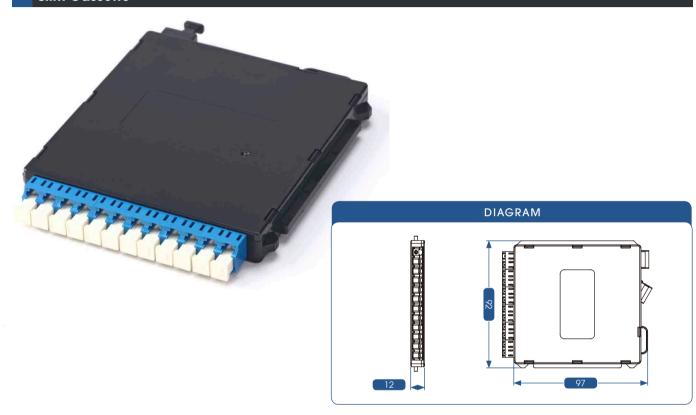
The system is designed to provide IP68 dust and water protection when connector and receptacle are mated or with dust caps installed.
Plug cap includes integrated pulling eye for easy installation. Gloriole's SC-IP assemblies are exceptionally suited for WiMax, LTE, wireless, wireless backhaul and base station applications.

ITEM	SC-IP Connector Plug Type	
Mode Type	Single Type	Multi Type
Insertion Loss	P Grade ≤ 0.15dB, A Grade ≤ 0.3dB	
Return Loss	≥ 50dB( <b>PC</b> ), 55dB( <b>UPC</b> ), 60dB( <b>APC</b> )	X
Durability	< 0.2dB change, 500 mating	
IP Rating	IP68	
Operation Temp.(°C)	-40°C~ +85°C	

....

#### Slim Cassette

Allegro



#### Allegro 1U

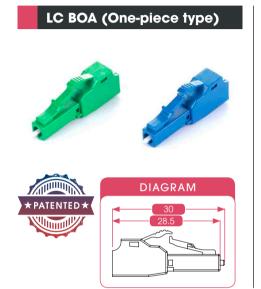


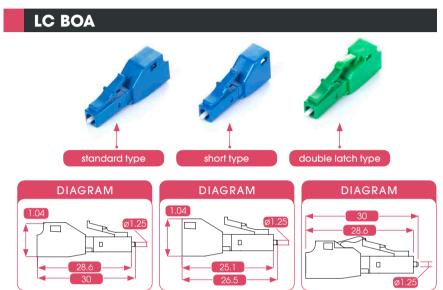


## **Build-out Attenuator**

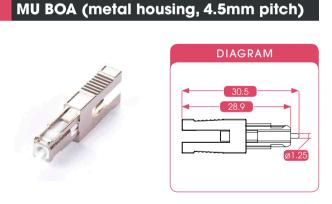
(BOA) Plug-in type

- **E** Features
- \* Easy installation compact design fits into existing connectors or patch panels
- \* Consistent performance precise attenuation value and hiah return loss
- \* Diversity various connectors for option
- \* High Stability and High Reliability
- \* Flawless end face
- \* Telcordia GR-910-core and RoHS Compliant





# MU BOA (plastic housing, 6.6mm pitch) DIAGRAM



Specifications are subject to change without prior notice.



#### **Specifications**

Specifications		Value	
Item		Single Mode	Multi Mode
Mayolonath		1310nm and 1550nm	850nm
Wavelength		1310nm or 1550nm	63011111
Attenuation Range		1dB ~ 25dB	1dB ~ 6dB
	0dB	Super $\leq$ 0.5dB; Ultra $\leq$ 0.3dB	≦ 0.5dB
Attenuation Variation	< 6dB	Supe ±0.75dB, Ultra ±0.5dB	≤ 6dB +1dB
	≥ 6dB	Super ±15%, Ultra ±10%	≡ OGB ±1GB
	PC	≧ 45dB	
Reflectance	UPC	≥ 50dB	-
	APC	Super ≥ 60dB ; Ultra ≥ 65dB	
Operation Temperature		-40° <b>C</b> ∼ 75° <b>C</b>	-40° <b>C</b> ∼ 75° <b>C</b>
Storage Temperature		-40° <b>C</b> ∼ 85° <b>C</b>	-40° <b>C</b> ∼ 85° <b>C</b>

## **In-line Attenuator**



## **Bulkhead Attenuator**



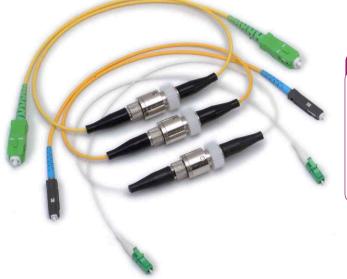
## Variable Optical Attenuator

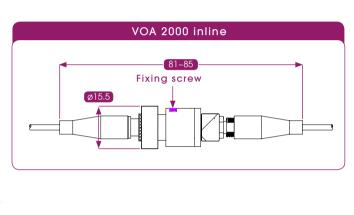


- \* Environmentally stable
- \* Easy installation
- \* Wide attenuation Range
- \* High performance Low excess loss, High return loss

unit: mm

#### Variable Optical Attenuator





#### **Variable Optical Attenuator Module**



#### **Hybrid Variable Optical Attenuator**



#### Specifications

		VOA	VOA Module
Operation Wavelength		1310nm or/and 1550nm for SM 850nm or 1300nm for MM	
Variable Range		1dB ~ 35dB for SM 1dB ~ 20dB for MM	
Reso	lution	0.20	dB
Reflectance	PC	≥ 45dB for SM	
Reliecidilice	APC	≥ 50dB for SM	
Adjust Method		Twist by hand	By Screw Driver
			3 4
Operation Temperature		-40° <b>C</b> ~	75° <b>C</b>
Storage Temperature		-40°C~ 85°C	

Part Number	Description		
1824151516201010	VOA 1~35dB SM LC/PC-LC/PC Simplex 2.0mm 1M		
1A145421211	VOA Module 4Channels 1~35dB SM SC/UPC, 205x101x37mm		

<sup>\*</sup> Please contact us for other configurations.

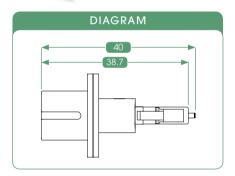
## Hybrid Adapter & Attenuator

#### **E** Features

- \* Easy installation compact design fits into existing connectors or patch panels
- \* Consistent performance precise attenuation value and high return loss
- \* Diversity various connectors for option
- \* High Stability and High Reliability
- \* Flawless end face
- \* Telcordia GR-910-core and RoHS Compliant

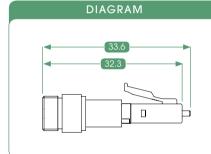
unit: mm



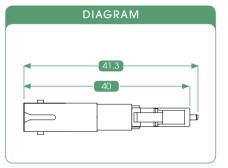




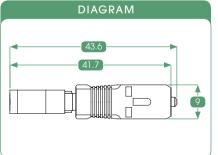






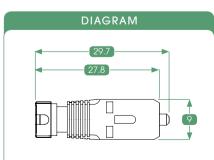




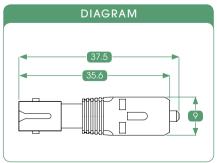






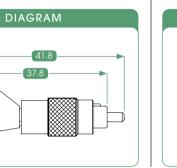






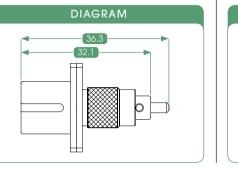
#### FC(Male)-LC(Female) Hybrid





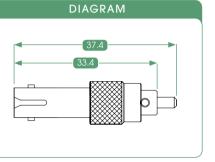
#### FC(Male)-SC(Female) Hybrid





#### FC(Male)-ST(Female) Hybrid





#### **Specifications**

Specifications		Value		
Item		Single Mode	Multi Mode	
Wenteleneth		1310nm and 1550nm	850nm and 1310nm	
Wavelength		1310nm or 1550nm	850nm or 1310nm	
Attenuation Range		0dB ~ 30dB	0dB ~ 20dB	
Insertion Loss (0 dB	Insertion Loss (0 dB)		≦ 0.5dB	
Precision	< 10dB	Super ±0.5dB, Ultra ±0.75dB	±1dB	
riecision	≥ 10dB	Super±10%, Ultra ±15%	±15%	
Reflectance	PC	≥ 45dB		
Reliectance	UPC	≥ 50dB	-	
Operation Temperature		-40° <b>C</b> ~ 75° <b>C</b>	-40° <b>C</b> ∼ 75° <b>C</b>	
Storage Temperature		-40° <b>C</b> ~ 85° <b>C</b>	-40° <b>C</b> ∼ 85° <b>C</b>	

#### Applications

monitorina \* Fiber Optical Protection

\* Measurement automation

**E** Features \* Wide Operation Wavelength

Ranae.

\* Multiple control methods.

\* Low insertion loss & crosstalk.

s1xN optic switch (black)

\* Fast channel switching.

\* GR-1073 & GR-1221

Compliant.

With superb optomechanical integrated design and advanced assembly skill, GET's fiber 1xN optical switch provide excellent optical performance and reliable long-term operation.

Switch

It is suitable for laboratory, measurement, light path switching, and fiber monitoring in fiber optics communication and fiber sensing field.

unit: mm

**MU Terminator** 



**SC Terminator** 

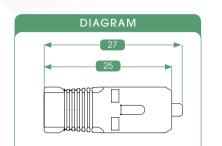
**E** Features

\* Low backreflection

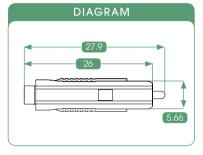
\* Flawless end face

\* High reliability

\* High power endurance







#### **FC Terminator**

Ø6

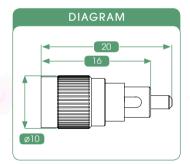
DIAGRAM

unit: mm

**LC Terminator** 

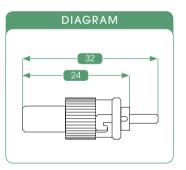








**ST Terminator** 



#### **Specifications**

Performance		Value
Wavelength(Single Mode)		1310nm and 1550nm
Plug Type		SC, FC, LC, MU, ST
Reflectance (dB)	PC	≥ 50dB
	UPC	≥ 55dB
	APC	≥ 65dB

**Terminator** 

Part Number	Description
1D15201	Terminator LC/PC
1D54201	Terminator SC/PC
1D48201	Terminator MU/PC
1D11201	Terminator FC/PC
1D60201	Terminator ST/PC

<sup>\*</sup> Please contact us for other configurations.

#### 1xN optic switch (mount)





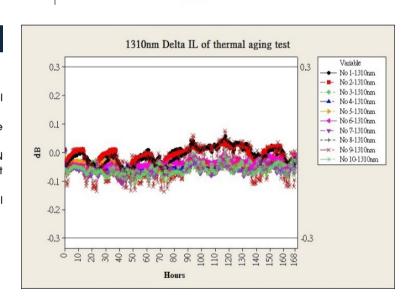
#### **Specifications**

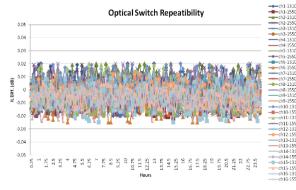
Most important characteristic of optical switch is channel repeatability.

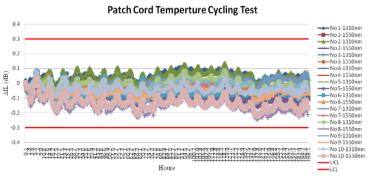
It will affect the accuracy of optical device performance test during long term measurement.

Within  $\pm 0.03$  dB of channel repeatability (Fig. 1), GET's 1xN optical switch series is suitable for fiber optics component testing in lab and manufacturing.

Figures 2 and 3 are part of GR-326-CORE environmental testing for product verification.







42 | Terminator Specifications are subject to change without prior notice.

# **MEMO**