GL Series

Flexible Low Loss
Microwave Cable Assembly

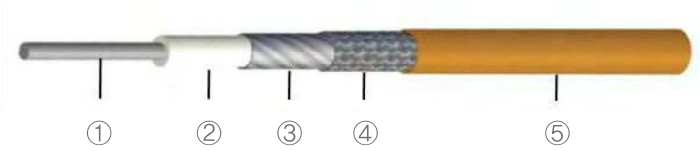
GigaLane GL Series cable assemblies perform in the range of frequency usage that is applicable up to 40 GHz . Center conductor consists of Stranded and Solid center conductor. By using Low density PTFE(extruded) dielectric, a value of the lowest insertion loss is extracted. These are specialized in providing excellent shielding effectiveness, flexibility and durability and supplied in fields of Commercial, Military RF & microwave airborne systems, Test & Measurement applications (Lab & Production line, Anechoic Chamber).
GigaLane provides two types of Neck type for GL cable assembly. One is sleeve type to strengthen the neck area of connector and gives a comfort grip which provides easiness in assembling connectors. Another is shrink tube type which is suitable for applying to small space.

GL140s Cable

▶ Features and benefits

- Frequency ranges from DC to 40 GHz
- Low Loss and Flexibility
- Durability
- Low density PTFE(extruded) dielectric
- Excellent shielding effectiveness and return loss
- Cost-efficient

▶ Cable Design



Description		Diameter (mm)
① Center conductor	Silver-plated copper wire, stranded	19/0.2
② Dielectric	Low density PTFE (extruded)	-
③ Inner shield	Silver-plated copper tape	-
④ Outer shield	Silver-plated copper braid	-
⑤ Jacket	Extruded FEP	4.20

Electrical

Impedance	50 Ω
Operating frequency	40 GHz
Capacitance	86 pF/m
Velocity of propagation	77 % nom.
Time delay	4.35 ns/m
RF leakage (dB)	<-100
Dielectric constant	1.7
Phase stability vs. flexure (@18 GHz max.)	4°
IL stability vs. flexure (dB @minimum BR)	± 0.3
Phase stability vs. temp. (deg/GHz/m) (-40 ~ 80°)	< 2°

Mechanical & Environmental

Minimum bend radius (mm)	19.05
Weight (g/m)	42
Temperature	-55℃ to + 135℃

Suitable Connectors

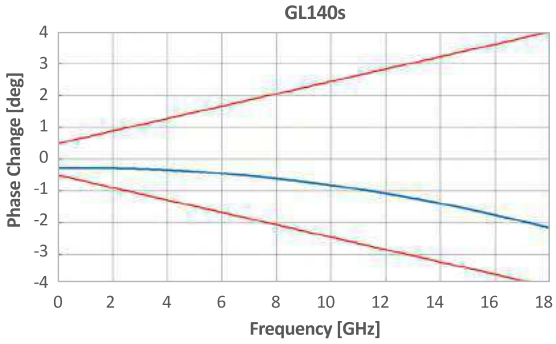
Cable selection			Standard Connector selection					max. VSWR		
			SMA type		N type		2.9mm type	Connector		
P/N	Frequency	Attenuation (dB/m)	Straight	R/A	Straight	R/A	Straight	ST to ST	ST to R/A	R/A to R/A
GL140sB02	6 GHz	0.88	SMS114 SMS114B*	SMR114	NMS114	NMR114B	-	1.15	1.2	1.25
GL140sC	18 GHz	1.62	SMS122 SMS122B*	-	-		-	1.25	-	-
GL140sD	26.5 GHz	1.98	SMS115 SMS115B*	-	-		-	1.25	-	-
GL140sE	40 GHz	2.52	-	-	-		KMS116	1.35	-	-

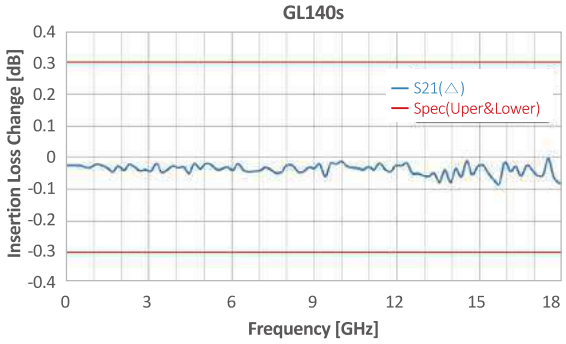
* Please refer to connector drawing on p. 82

* xxx xxxB : Shrink Tube Type ex) SMS114B

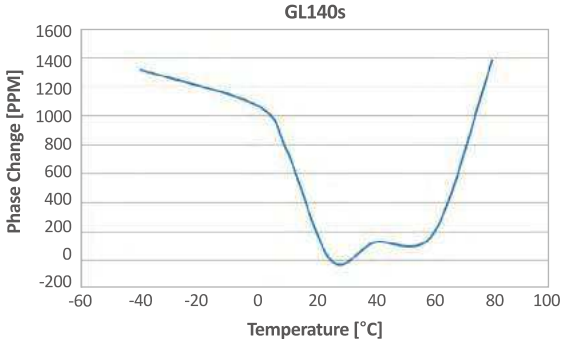
GL140s Cable

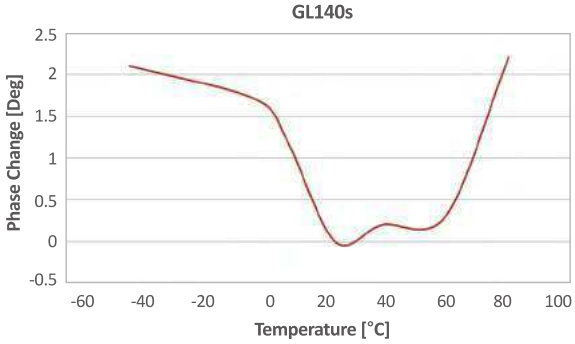
▶ Cable Insertion & Stability with Flexure



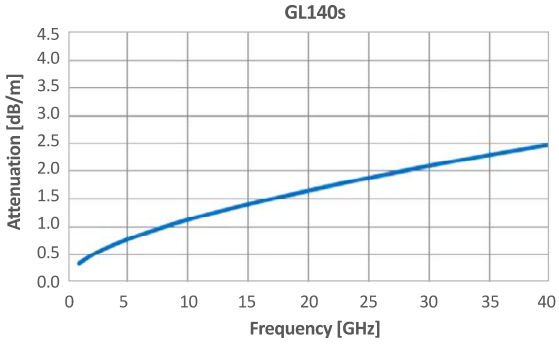


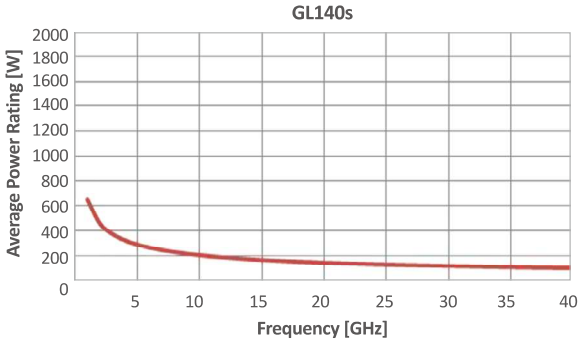
▶ Cable Phase Stability with Temperature



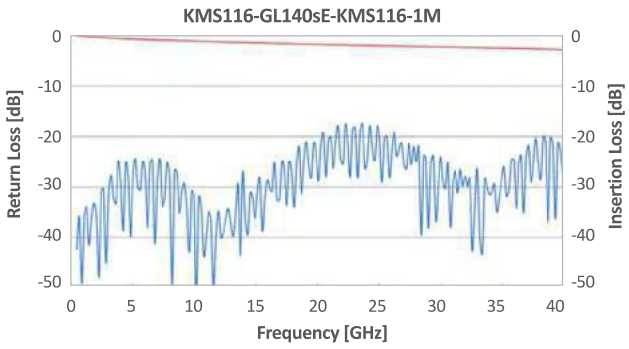


▶ Cable Attenuation & Power





▶ Test Result

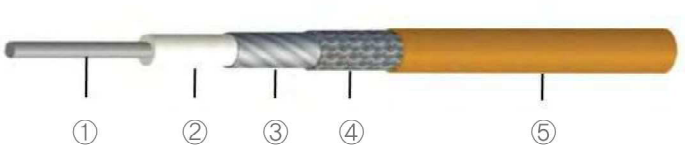


GL200 & GL200s Cable

▶ Features and benefits

- Frequency ranges from DC to 26.5 GHz
- Low Loss and Flexibility
- Durability
- Low density PTFE(extruded) dielectric
- Excellent shielding effectiveness and return loss
- Cost-efficient

▶ Cable Design



Description		Diameter (mm)	
		GL200	GL200s
① Center conductor	GL200: Silver-plated copper wire, solid GL200s: Silver-plated copper wire, stranded	1.39	19/0.3
② Dielectric	Low density PTFE (extruded)	-	-
③ Inner shield	Silver-plated copper tape	-	-
④ Outer shield	Silver-plated copper braid	-	-
⑤ Jacket	Extruded FEP	5.70	5.70

Electrical

Impedance	50 Ω
Operating frequency	18 GHz
Capacitance	85 pF/m
Velocity of propagation	77 % nom.
Time delay	4.35 ns/m
RF leakage (dB)	-100
Dielectric constant	1.7
Phase stability vs. flexure (@18 GHz max.)	5°
IL stability vs. flexure (dB @minimum BR)	± 0.3
Phase stability vs. temp. (deg/GHz/m) (-40 ~ 80°)	< 2 °

Mechanical & Environmental

Minimum bend radius (mm)	29.2
Weight (g/m)	70
Temperature	-55℃ to + 135℃

Suitable Connectors

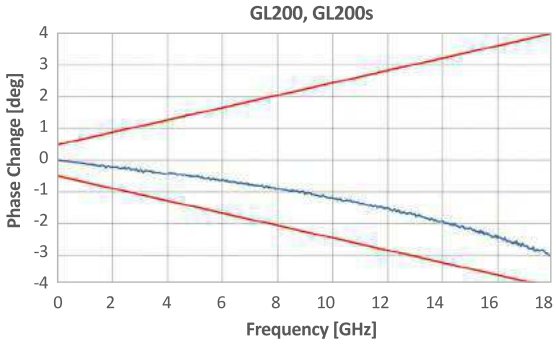
Cable selection			Standard Connector selection					max. VSWR		
			SMA type		N type		TNCA type	Connector		
P/N	Frequency	Attenuation (dB/m)	Straight	R/A	Straight	R/A	Straight	ST to ST	ST to R/A	R/A to R/A
GL200C	18 GHz	1.15	SMS111 SMS111B*	SMR111	NMS111 NFS111(Jack)	NMR111	G24SMC001	1.25	1.35	1.45
GL200D	26.5 GHz	1.43	SMS112 SMS112B*	-	-	-	-	1.25	-	-
GL200sC	18 GHz	1.19	SMS111 SMS111B*	SMR111	NMS111 NFS111(Jack)	NMR111	G24SMC001	1.25	1.35	1.45
GL200sD	26.5 GHz	1.45	SMS112 SMS112B*	-	-	-	-	1.25	-	-

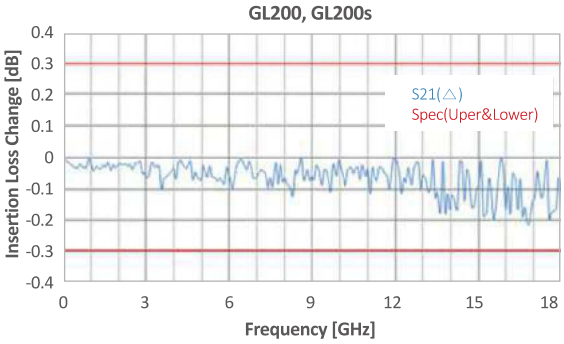
* Please refer to connector drawing on p. 83

* XXX XXXB: Shrink Tube ex)SMS111B

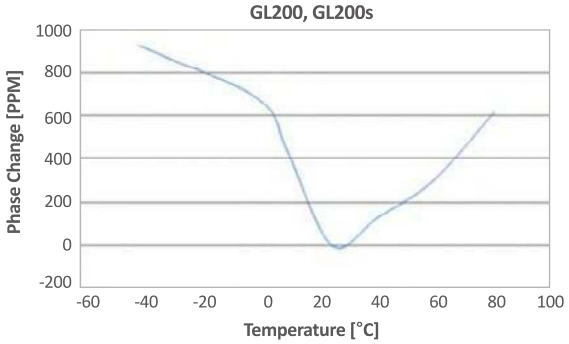
GL200 & GL200s Cable

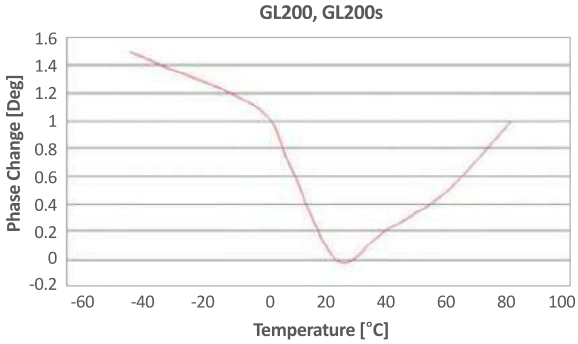
▶ Cable Insertion & Stability with Flexure



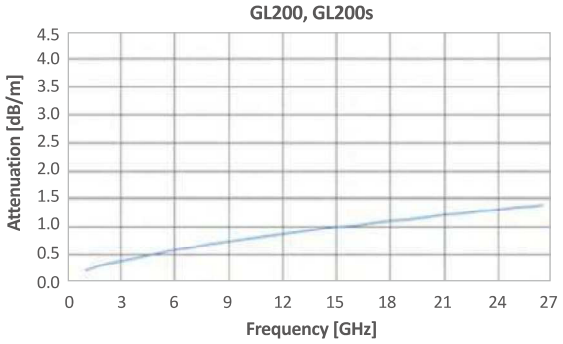


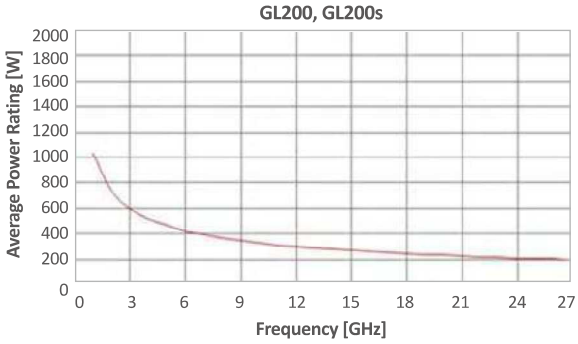
▶ Cable Phase Stability with Temperature



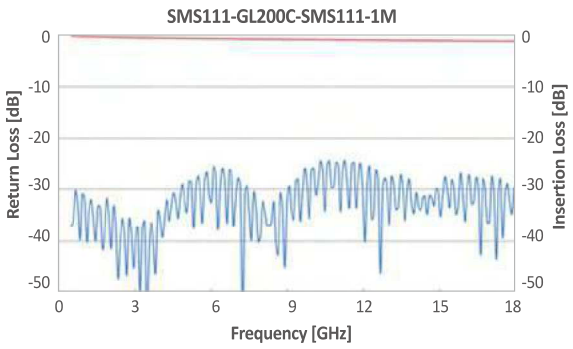


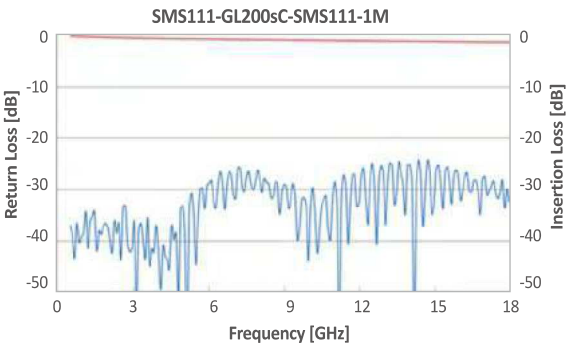
▶ Cable Attenuation & Power





▶ Test Result



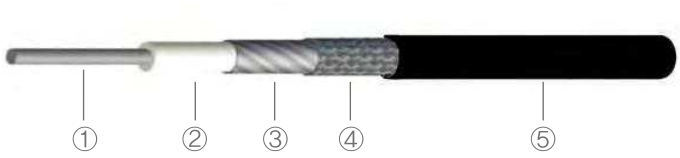


GL200sC01 Cable

▶ Features and benefits

- Frequency ranges from DC to 26.5 GHz
- Low Loss and Highest Flexibility
- Durability
- Low density PTFE(extruded) dielectric
- Excellent shielding effectiveness and return loss
- Cost-efficient

▶ Cable Design



Description		Diameter (mm)
① Center conductor	Silver-plated copper wire, stranded	19/0.3
② Dielectric	Low density PTFE (extruded)	-
③ Inner shield	Silver-plated copper tape	-
④ Outer shield	Silver-plated copper braid	-
⑤ Jacket	PUR, Black	6.10

Electrical

Impedance	50 Ω
Operating frequency	18 GHz
Capacitance	85 pF/m
Velocity of propagation	77 % nom.
Time delay	4.35 ns/m
RF leakage (dB)	<-100
Dielectric constant	1.7
Phase stability vs. flexure (@18 GHz max.)	5°
IL stability vs. flexure (dB @minimum BR)	± 0.3
Phase stability vs. temp. (deg/GHz/m) (-40 ~ 80°)	< 2 °

Mechanical & Environmental

Minimum bend radius (mm)	29.2
Weight (g/m)	70
Temperature	-40℃ to + 100℃

Suitable Connectors

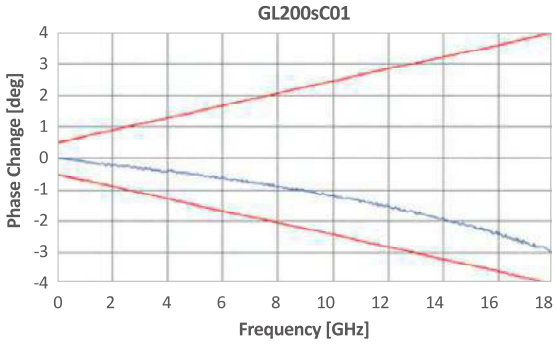
Cable selection			Standard Connector selection					max. VSWR		
			SMA type		N type		TNCA type	Connector		
P/N	Frequency	Attenuation (dB/m)	Straight	R/A	Straight	R/A	Straight	ST to ST	ST to R/A	R/A to R/A
GL200sC01	18 GHz	1.19	SMS111 SMS111B*	SMR111	NMS111 NFS111(Jack)	NMR111	G24SMC001	1.25	1.35	1.45
GL200sD01	26.5 GHz	1.45	SMS112 SMS112B*	-	-			1.25	-	-

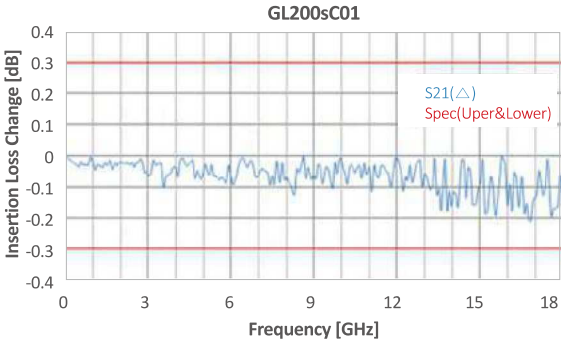
* Please refer to connector drawing on p. 83

* XXX XXXB: Shrink Tube ex)SMS111B

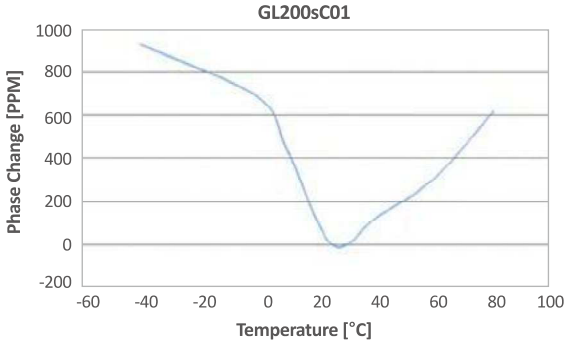
GL200sC01 Cable

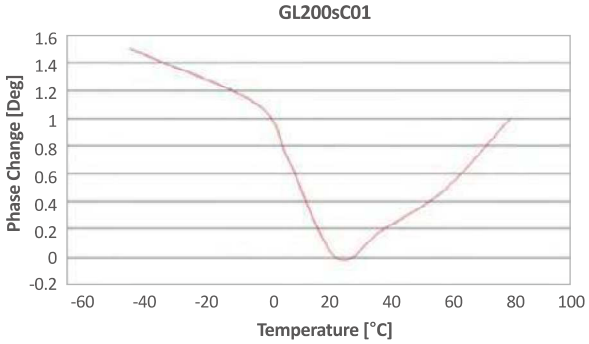
▶ Cable Insertion & Stability with Flexure



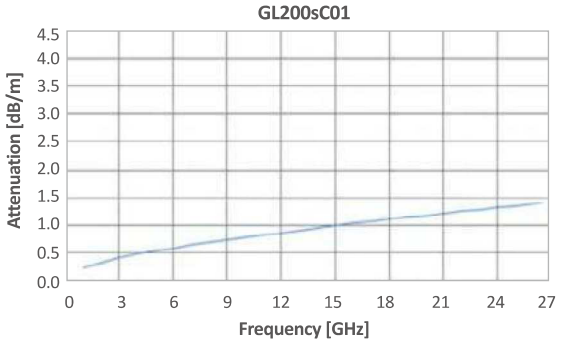


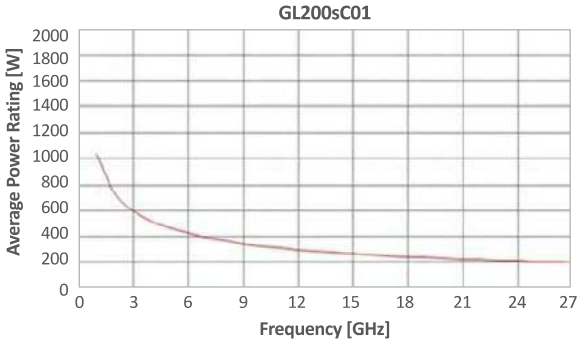
▶ Cable Phase Stability with Temperature



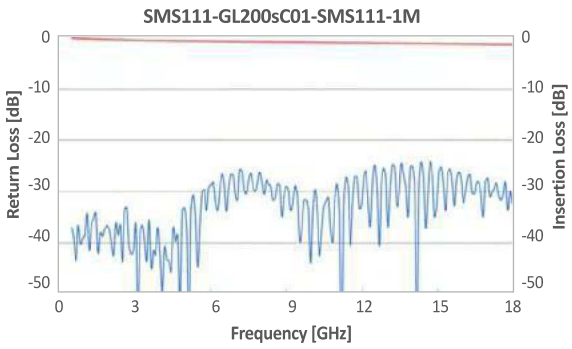


▶ Cable Attenuation & Power

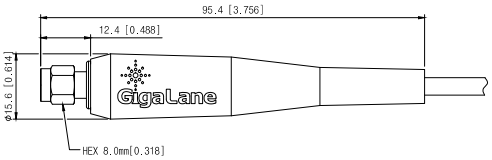
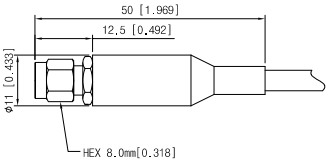
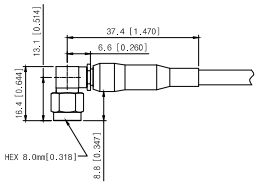
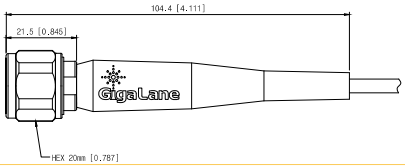
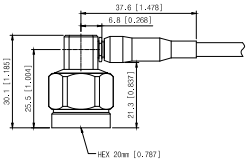
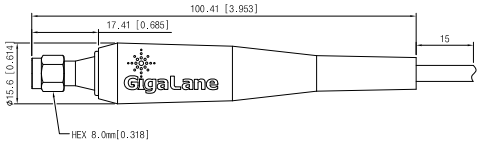
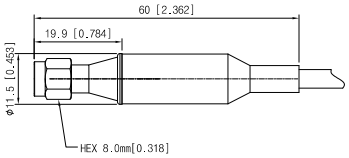
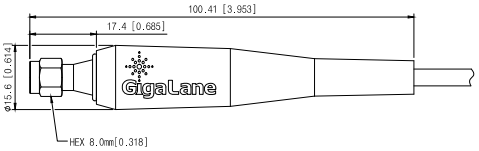
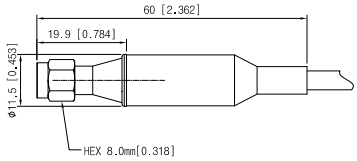
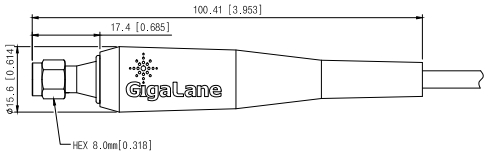




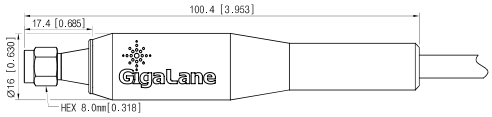
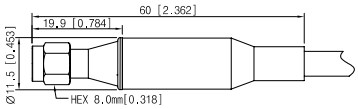
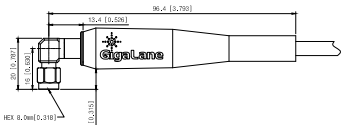
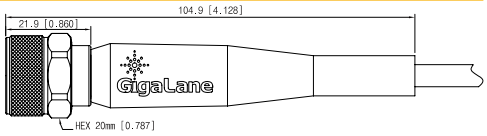
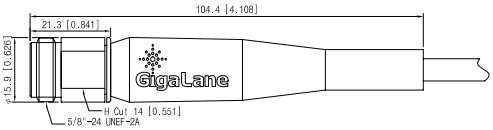
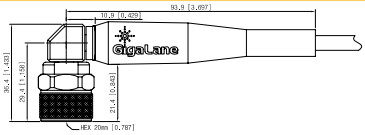
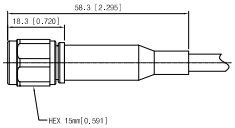
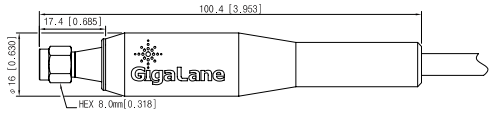
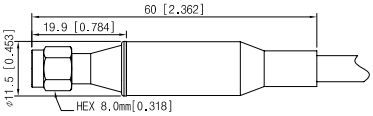
▶ Test Result



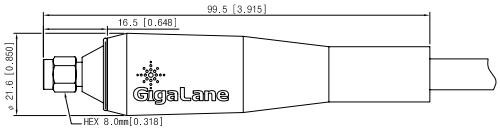
Suitable Connectors for GL Series

Cable			Connector		Connector Drawings
Groups	P/N	Frequency	Description	P/N	
Flexible Low Loss	GL140sB02	6 GHz	Straight SMA PLUG (Sleeve type)	SMS114	
			Straight SMA PLUG (Shrink tube type)	SMS114B	
			Right Angle SMA PLUG (Shrink tube type)	SMR114B	
			Straight N PLUG (Sleeve type)	NMS114	
			Right Angle N PLUG (Shrink tube type)	NMR114B	
	GL140sC	18 GHz	Straight SMA PLUG (Sleeve type)	SMS122	
			Straight SMA PLUG (Shrink tube type)	SMS122B	
	GL140sD	26.5 GHz	Straight SMA PLUG (Sleeve type)	SMS115	
			Straight SMA PLUG (Shrink tube type)	SMS115B	
	GL140sE	40 GHz	Straight 2.92mm PLUG (Sleeve type)	KMS116	

Suitable Connectors for GL Series

Cable			Connector		Connector Drawings
Groups	P/N	Frequency	Description	P/N	
Flexible Low Loss	GL200C GL200sC GL200sC01	18 GHz	Straight SMA PLUG (Sleeve type)	SMS111	
			Straight SMA PLUG (Shrink tube type)	SMS111B	
			Right Angle SMA PLUG (Sleeve type)	SMR111	
			Straight N PLUG (Sleeve type)	NMS111	
			Straight N JACK (Sleeve type)	NFS111	
			Right Angle N PLUG (Sleeve type)	NMR111	
			TCNA Straight Plug	G24SC M0001	
	GL200D GL200sD GL200sD01	26.5 GHz	Straight SMA PLUG (Sleeve type)	SMS112	
			Straight SMA PLUG (Shrink tube type)	SMS112B	

▶ Suitable Connectors for GUL Series

Cable			Connector		Connector Drawings
Groups	P/N	Frequency	Description	P/N	
Flexible Ultra Low Loss	GUL310C	18 GHz	Straight SMA PLUG (Sleeve type)	SMS120	
			Straight SMA PLUG (Sleeve type)	NMS120