

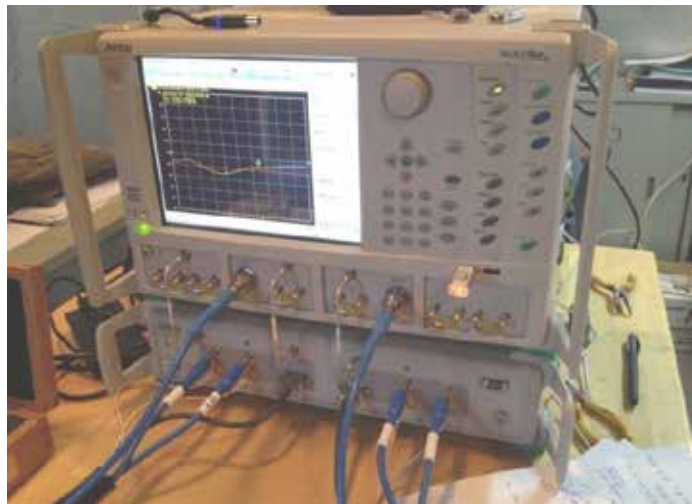
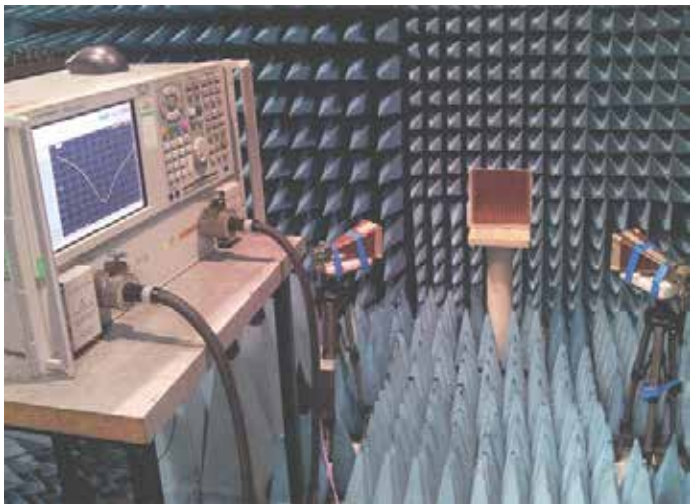


Nubicom Microwave Cable

NUBICOM
www.nubicom.co.kr

Amazing Performance with core technology

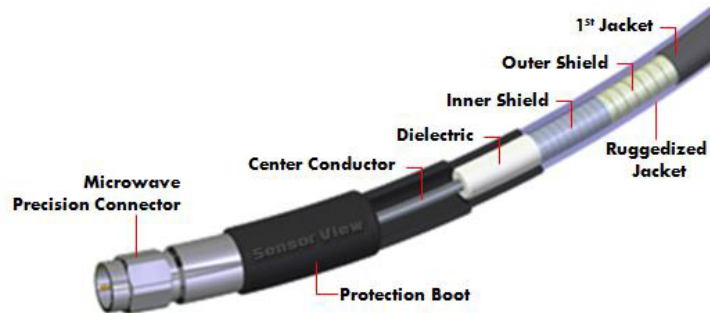
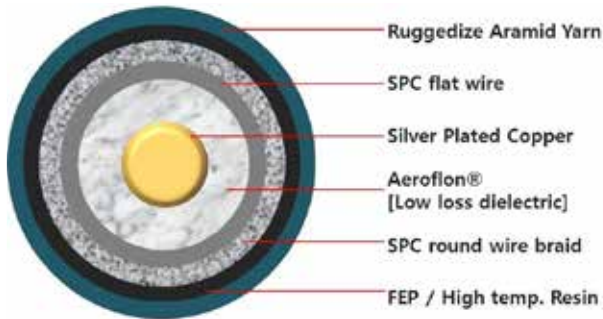
	Product & Feature	Applicable Products		Core Technology of Sensorview				Application
		Cable	Antenna	low dielectric constant Aeroflon®	lower ohmic loss Coolductor®	Plating on Resin Conflon®	Plating on Fiber Zenild®	
1	Low loss	●	●	○	○	○	○	RF Connectivity
2	Low noise	●				○	○	High sensitivity
3	Light weight	●	●	○		○	○	Aircraft, Automotive
4	Low profile	●		○	○	○		Mobile phone, AP
5	Low cost	●	●	○		○		Test & Measurement
6	Low PIM	●				○		Antenna, Filter test cable
7	Flexible	●	●	○			○	Test cable & RRH
8	High power	●	●	○	○			High power, TVAC
9	Shielding (EMI)	●				○	○	Chamber, Defense system
10	Phase stable vs Temp.	●	●	○				Phased Array, Radar
11	Phase matched	●		○		○		Phased Array, High speed
12	Composite	●		○			○	5G Infrastructure



Microwave Cable & Cable Assembly Technologies

NUBICOM is the manufacturer of cable and connector solutions for microwave & millimeter wave Interconnect systems. We offer stable and special coaxial cable assemblies with excellent performance.

Structures



- ▶ **Ruggedized Flexible Low Loss Cable series**
 - Aramid Yarn Jacket / High abrasion resistance
 - High temperature strength / High durability
 - High Operating Frequency / Phase and I/L stability

Aeroflon® Dielectric

For low loss and stable electrical performance

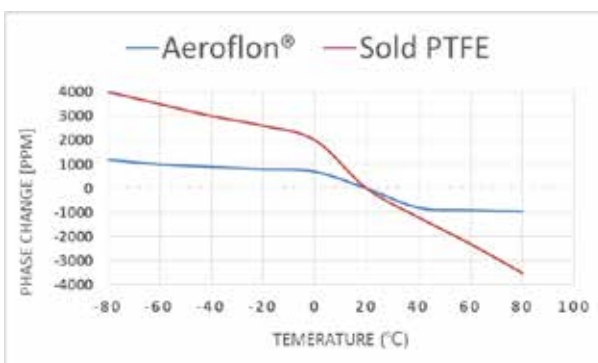
Sensorview developed porous PTFE dielectric for the low loss microwave coaxial cable assemblies to obtain a dielectric constant as close as possible to air-dielectric.

Low loss, low density dielectrics range in dielectric constant from 1.6~1.7 and have a loss tangent of 0.00004. So Sensorview low loss coaxial cable is much lower loss at microwave frequency than general solid PTFE offers.



Thermally, Sensorview's Aeroflon® have a smaller "knee" in their CTE profile around room temp. Unlike solid PTFE dielectrics, they remain stable when exposed to extreme temperatures, allowing Them to be used for higher power applications.

PTFE Knee Graph



- ▶ **Low insertion loss**
- ▶ **Phase stable vs Temperature**
- ▶ **Insertion loss stable vs bend**
- ▶ **Phase stable vs bend**
- ▶ **Low VSWR up to 40GHz**

Aeroflon® DC ~ 6GHz series

To allow you to choose the microwave coaxial cable best suited to our needs, Please refer the below table, and to each cable's data sheet in the following pages.

Specifications

Mechanical									
TYPE	6GHz Low Loss (Flex)		6GHz Low Loss (Super Flex)		6GHz Low Loss (Flex) Aramid Jacket		6GHz Low Loss (Super Flex) Aramid Jacket		
Raw Cable Part No.	CSV3d		CSV3		CSVA3d		CSVA3		
Center Conductor Type	Solid		Stranded		Solid		Stranded		
Center Conductor dia. [mm]	1.12		19 / 0.225		1.12		19 / 0.225		
Outer diameter [mm]	5.20±0.1		5.20±0.1		5.80±0.1		5.80±0.1		
Minimum Bend radius [mm]	20		20		20		20		
Weight [g/m]	55.5		55.5		62		62		
Temperature range	-50°C~135°C		-50°C~135°C		-50°C~135°C		-50°C~135°C		
Electrical									
Operating Frequency	DC ~ 6GHz		DC ~ 6GHz		DC ~ 6GHz		DC ~ 6GHz		
Velocity of propagation	77% nom.		77% nom.		77% nom.		77% nom.		
RF leakage	- 90dB		- 90dB		- 90dB		- 90dB		
Insertion Loss [dB]		[dB/m]	[dB/FT]	[dB/m]	[dB/FT]	[dB/m]	[dB/FT]	[dB/m]	[dB/FT]
	1 GHz	- 0.30	- 0.091	- 0.32	- 0.098	- 0.30	- 0.091	- 0.32	- 0.098
	2 GHz	- 0.40	- 0.122	- 0.42	- 0.128	- 0.40	- 0.122	- 0.42	- 0.128
	3 GHz	- 0.49	- 0.149	- 0.52	- 0.159	- 0.49	- 0.149	- 0.52	- 0.159
	4 GHz	- 0.58	- 0.177	- 0.60	- 0.183	- 0.58	- 0.177	- 0.60	- 0.183
	5 GHz	- 0.65	- 0.198	- 0.68	- 0.207	- 0.65	- 0.198	- 0.68	- 0.207
6 GHz	- 0.72	- 0.220	- 0.75	- 0.229	- 0.72	- 0.220	- 0.75	- 0.229	
Average Power Rating [W] @ 25°C, at Sea Level									
1 GHz	561		505		561		505		
2 GHz	397		357		397		357		
3 GHz	324		292		324		292		
4 GHz	281		253		281		253		
5 GHz	251		226		251		226		
6 GHz	229		206		229		206		

Aeroflon® DC ~ 26.5GHz series

To allow you to choose the microwave coaxial cable best suited to our needs, Please refer the below table, and to each cable's data sheet in the following pages.

Specifications

Mechanical							
TYPE	26.5GHz Low Loss		26.5GHz Low Loss (Super Flex)		26.5GHz Low Loss (Super Flex) Aramid Jacket		
Raw Cable Part No.	CSVF1		CSVS1		CSVA1		
Center Conductor Type	Stranded		Stranded		Stranded		
Center Conductor dia. [mm]	19 / 0.287		19 / 0.287		19 / 0.287		
Outer diameter [mm]	5.60±0.1		6.20±0.1		6.90±0.1		
Minimum Bend radius [mm]	30		30		30		
Weight [g/m]	58		75		83		
Temperature range	-50°C~125°C		-50°C~135°C		-50°C~135°C		
Electrical							
Operating Frequency	DC ~ 26.5GHz		DC ~ 26.5GHz		DC ~ 26.5GHz		
Velocity of propagation	77% nom.		77% nom.		77% nom.		
RF leakage	- 90dB		- 90dB		- 90dB		
Insertion Loss [dB]		[dB/m]	[dB/FT]	[dB/m]	[dB/FT]	[dB/m]	[dB/FT]
	1 GHz	- 0.25	- 0.076	- 0.25	- 0.076	- 0.25	- 0.076
	3 GHz	- 0.45	- 0.137	- 0.45	- 0.137	- 0.45	- 0.137
	6 GHz	- 0.65	- 0.198	- 0.65	- 0.198	- 0.65	- 0.198
	10 GHz	- 0.88	- 0.268	- 0.88	- 0.268	- 0.88	- 0.268
	12 GHz	- 0.97	- 0.296	- 0.97	- 0.296	- 0.97	- 0.296
	18 GHz	- 1.25	- 0.381	- 1.25	- 0.381	- 1.25	- 0.381
	26.5 GHz	- 1.55	- 0.473	- 1.55	- 0.473	- 1.55	- 0.473
Average Power Rating [W] @ 25°C, at Sea Level							
1 GHz	696		665		665		
6 GHz	285		272		272		
10 GHz	220		211		211		
12 GHz	201		192		192		
18 GHz	164		157		157		
26.5 GHz	136		130		130		

Aeroflon® DC ~ 33GHz series

To allow you to choose the microwave coaxial cable best suited to our needs, Please refer the below table, and to each cable's data sheet in the following pages.

Specifications

Mechanical									
TYPE	33GHz Low Loss (Flex)		33GHz Low Loss (Super Flex)		33GHz Low Loss (Flex) Aramid Jacket		33GHz Low Loss (Super Flex) Aramid Jacket		
Raw Cable Part No.	CSVS2d		CSVS2		CSVA2d		CSVA2		
Center Conductor Type	Solid		Stranded		Solid		Stranded		
Center Conductor dia. [mm]	1.12		19 / 0.225		1.12		19 / 0.225		
Outer diameter [mm]	5.20±0.1		5.20±0.1		5.80±0.1		5.80±0.1		
Minimum Bend radius [mm]	25		25		25		25		
Weight [g/m]	56		55.5		62		62		
Temperature range	-50°C~135°C		-50°C~135°C		-50°C~135°C		-50°C~135°C		
Electrical									
Operating Frequency	DC ~ 33GHz		DC ~ 33GHz		DC ~ 33GHz		DC ~ 33GHz		
Velocity of propagation	77% nom.		77% nom.		77% nom.		77% nom.		
RF leakage	- 90dB		- 90dB		- 90dB		- 90dB		
Insertion Loss [dB]		[dB/m]	[dB/FT]	[dB/m]	[dB/FT]	[dB/m]	[dB/FT]	[dB/m]	[dB/FT]
	1 GHz	- 0.31	- 0.095	- 0.33	- 0.101	- 0.31	- 0.095	- 0.33	- 0.101
	3 GHz	- 0.55	- 0.168	- 0.56	- 0.171	- 0.55	- 0.168	- 0.56	- 0.171
	6 GHz	- 0.67	- 0.204	- 0.75	- 0.229	- 0.67	- 0.204	- 0.75	- 0.229
	12 GHz	- 1.05	- 0.320	- 1.07	- 0.326	- 1.05	- 0.320	- 1.07	- 0.326
	18 GHz	- 1.30	- 0.396	- 1.40	- 0.427	- 1.30	- 0.396	- 1.40	- 0.427
	26.5 GHz	- 1.62	- 0.494	- 1.73	- 0.527	- 1.62	- 0.494	- 1.73	- 0.527
	28 GHz	- 1.70	- 0.518	- 1.79	- 0.546	- 1.70	- 0.518	- 1.79	- 0.546
33 GHz	- 1.85	- 0.564	- 2.00	- 0.610	- 1.85	- 0.564	- 2.00	- 0.610	
Average Power Rating [W] @ 25°C, at Sea Level									
1 GHz	561		505		561		505		
3 GHz	324		292		324		292		
6 GHz	229		206		229		206		
12 GHz	162		146		162		146		
18 GHz	133		119		133		119		
28 GHz	106		96		106		96		
33 GHz	98		88		98		88		

Aeroflon® DC ~ 40GHz series

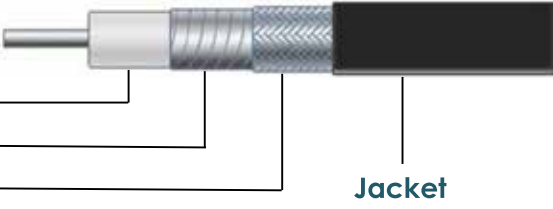
To allow you to choose the microwave coaxial cable best suited to our needs, Please refer the below table, and to each cable's data sheet in the following pages.

Specifications

Mechanical					
TYPE		40GHz Low Loss (Super Flex)		40GHz Low Loss (Super Flex) Aramid Jacket	
Raw Cable Part No.		CSV54		CSVA4	
Center Conductor Type		Stranded		Stranded	
Center Conductor dia. [mm]		19 / 0.18		19 / 0.18	
Outer diameter [mm]		5.10±0.1		5.70±0.1	
Minimum Bend radius [mm]		25		25	
Weight [g/m]		55		60	
Temperature range		-50°C~135°C		-50°C~135°C	
Electrical					
Operating Frequency		DC ~ 40GHz		DC ~ 40GHz	
Velocity of propagation		77% nom.		77% nom.	
RF leakage		- 90dB		- 90dB	
Insertion Loss [dB]		[dB/m]	[dB/FT]	[dB/m]	[dB/FT]
	1 GHz	- 0.34	- 0.104	- 0.34	- 0.104
	3 GHz	- 0.62	- 0.189	- 0.62	- 0.189
	6 GHz	- 0.88	- 0.268	- 0.88	- 0.268
	12 GHz	- 1.30	- 0.396	- 1.30	- 0.396
	18 GHz	- 1.65	- 0.503	- 1.65	- 0.503
	26.5 GHz	- 2.03	- 0.619	- 2.03	- 0.619
	28 GHz	- 2.10	- 0.640	- 2.10	- 0.640
40 GHz	- 2.60	- 0.793	- 2.60	- 0.793	
Average Power Rating [W] @ 25°C, at Sea Level					
1 GHz		369		369	
3 GHz		213		213	
6 GHz		151		151	
12 GHz		107		107	
18 GHz		87		87	
28 GHz		70		70	
40 GHz		59		59	

Cable Part Number : CSVS3d (DC ~ 6 GHz)

Construction



● Solid
Center Conductor
AeroFlon®
1st Shield(Flat wire)
2nd Shield(Round wire)
Jacket

Part	Material	Diameter
1	Center Conductor	Silver Plated Copper [Solid] Φ 1.12 [mm] Φ 0.044 [inch]
2	Dielectric	AeroFlon® [Extruded]
3	1 st / 2 nd Shield	Silver Plated Copper
4	Jacket	High Temperature Resin Φ 5.20 ± 0.1 [mm] Φ 0.204 ± 0.003 [inch]

Electrical & Mechanical specification

Characteristic Impedance	50 ± 1 Ω
Operating Frequency	DC to 6 GHz
Temperature	-50 °C ~ +135 °C
Velocity of Propagation	77% nominal
Minimum Bend Radius	20 mm / 0.78 inch
Weight [g/m]	55.5
Shielding Effectiveness	<-90 dB
Phase Stability vs. Flexure	1° max. @6GHz
Loss Stability vs. Flexure	Δ 0.05dB to 6GHz
Available Connector	SMA / N

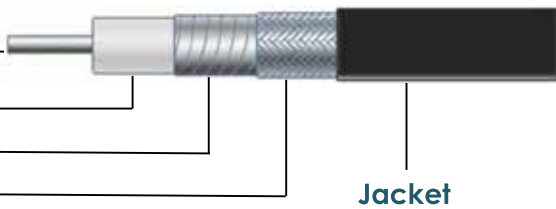
Raw Cable Insertion Loss [25°C, at Sea Level]			Average Power Rating [CW, 25°C, at Sea Level]	
Frequency	[dB/m]	[dB/FT]	Frequency	[Watt]
1 GHz	- 0.30	- 0.091	1 GHz	561
2 GHz	- 0.40	- 0.122	2 GHz	397
3 GHz	- 0.49	- 0.149	3 GHz	324
4 GHz	- 0.58	- 0.177	4 GHz	281
5 GHz	- 0.65	- 0.198	5 GHz	251
6 GHz	- 0.72	- 0.220	6 GHz	229

Microwave Cable

DC ~ 6GHz phase stable cable

Cable Part Number : CSVS3 (DC ~ 6 GHz)

Construction



Stranded

Center Conductor

Aeroflon®

1st Shield (Flat wire)

2nd Shield (Round wire)

Jacket

Part	Material	Diameter
1	Center Conductor	Silver Plated Copper [Stranded] Φ 19 / 0.225 [mm] Φ 19 / 0.0088 [inch]
2	Dielectric	Aeroflon® [Extruded]
3	1 st / 2 nd Shield	Silver Plated Copper
4	Jacket	High Temperature Resin Φ 5.20 ± 0.1 [mm] Φ 0.204 ± 0.003 [inch]

Electrical & Mechanical specification

Characteristic Impedance	50 ± 1 Ω
Operating Frequency	DC to 6 GHz
Temperature	-50 °C ~ +135 °C
Velocity of Propagation	77% nominal
Minimum Bend Radius	20 mm / 0.78 inch
Weight [g/m]	55.5
Shielding Effectiveness	<-90 dB
Phase Stability vs. Flexure	1° max. @6GHz
Loss Stability vs. Flexure	Δ 0.05dB to 6GHz
Available Connector	SMA / N

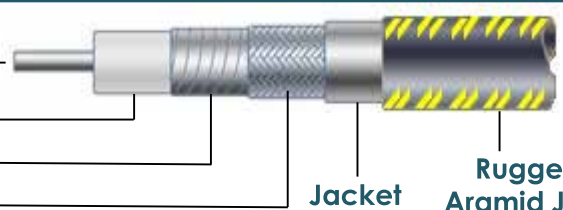
Raw Cable Insertion Loss [25°C, at Sea Level]			Average Power Rating [CW, 25°C, at Sea Level]	
Frequency	[dB/m]	[dB/FT]	Frequency	[Watt]
1 GHz	- 0.32	- 0.098	1 GHz	505
2 GHz	- 0.42	- 0.128	2 GHz	357
3 GHz	- 0.52	- 0.159	3 GHz	292
4 GHz	- 0.60	- 0.183	4 GHz	253
5 GHz	- 0.68	- 0.207	5 GHz	226
6 GHz	- 0.75	- 0.229	6 GHz	206

Microwave Cable

DC ~ 6GHz phase stable cable

Cable Part Number : CSVA3d (DC ~ 6 GHz)

Construction



Solid
Center Conductor
Aeroflon®
1st Shield(Flat wire)
2nd Shield(Round wire)
Jacket
Ruggedized Aramid Jacket

Part	Material	Diameter
1	Center Conductor	Silver Plated Copper [Solid] Φ 1.12 [mm] Φ 0.044 [inch]
2	Dielectric	Aeroflon® [Extruded]
3	1 st / 2 nd Shield	Silver Plated Copper
4	Jacket	Ruggedized Aramid Yarn Φ 5.80 ± 0.1 [mm] Φ 0.228 ± 0.003 [inch]

Electrical & Mechanical specification

Characteristic Impedance	50 ± 1 Ω
Operating Frequency	DC to 6 GHz
Temperature	-50 °C ~ +135 °C
Velocity of Propagation	77% nominal
Minimum Bend Radius	20 mm / 0.78 inch
Weight [g/m]	62
Shielding Effectiveness	<-90 dB
Phase Stability vs. Flexure	1° max. @6GHz
Loss Stability vs. Flexure	Δ 0.05dB to 6GHz
Available Connector	SMA / N

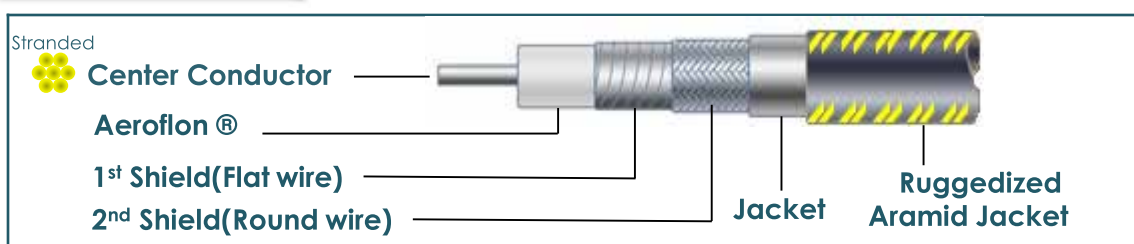
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2 GHz	- 0.40	- 0.122	2 GHz	397
3 GHz	- 0.49	- 0.149	3 GHz	324
4 GHz	- 0.58	- 0.177	4 GHz	281
5 GHz	- 0.65	- 0.198	5 GHz	251
6 GHz	- 0.72	- 0.220	6 GHz	229

Microwave Cable

DC ~ 6GHz phase stable cable

Cable Part Number : CSVA3 (DC ~ 6 GHz)

Construction



Stranded

Center Conductor

Aeroflon®

1st Shield (Flat wire)

2nd Shield (Round wire)

Jacket

Ruggedized Aramid Jacket

Part	Material	Diameter
1	Center Conductor	Silver Plated Copper [Stranded] Φ 19 / 0.225 [mm] Φ 19 / 0.0088 [inch]
2	Dielectric	Aeroflon® [Extruded]
3	1 st / 2 nd Shield	Silver Plated Copper
4	Jacket	Ruggedized Aramid Yarn Φ 5.80 ± 0.1 [mm] Φ 0.228 ± 0.003 [inch]

Electrical & Mechanical specification

Characteristic Impedance	50 ± 1 Ω
Operating Frequency	DC to 6 GHz
Temperature	-50 °C ~ +135 °C
Velocity of Propagation	77% nominal
Minimum Bend Radius	20 mm / 0.78 inch
Weight [g/m]	55.5
Shielding Effectiveness	<-90 dB
Phase Stability vs. Flexure	1° max. @6GHz
Loss Stability vs. Flexure	Δ 0.05dB to 6GHz
Available Connector	SMA / N

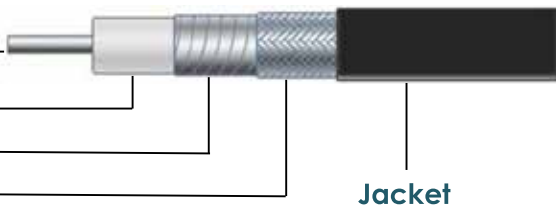
Raw Cable Insertion Loss [25°C, at Sea Level]			Average Power Rating [CW, 25°C, at Sea Level]	
Frequency	[dB/m]	[dB/FT]	Frequency	[Watt]
1 GHz	- 0.32	- 0.098	1 GHz	505
2 GHz	- 0.42	- 0.128	2 GHz	357
3 GHz	- 0.52	- 0.159	3 GHz	292
4 GHz	- 0.60	- 0.183	4 GHz	253
5 GHz	- 0.68	- 0.207	5 GHz	226
6 GHz	- 0.75	- 0.229	6 GHz	206

Microwave Cable

DC ~ 6GHz phase stable cable

Cable Part Number : CSVF1 (DC ~ 26.5 GHz)

Construction



Stranded

Center Conductor

Aeroflon®

1st Shield(Flat wire)

2nd Shield(Round wire)

Jacket

Part	Material	Diameter
1	Center Conductor	Silver Plated Copper [Stranded] Φ 19 / 0.287 [mm] Φ 19 / 0.0113 [inch]
2	Dielectric	Aeroflon® [Extruded]
3	1 st / 2 nd Shield	Silver Plated Copper
4	Jacket	FEP Φ 5.60 ± 0.1 [mm] Φ 0.220 ± 0.003 [inch]

Electrical & Mechanical specification

Characteristic Impedance	50 ± 1 Ω
Operating Frequency	DC to 26.5 GHz
Temperature	-50 °C ~ +125 °C
Velocity of Propagation	77% nominal
Minimum Bend Radius	30 mm / 1.18 inch
Weight [g/m]	58
Shielding Effectiveness	<-90 dB
Phase Stability vs. Flexure	6° max. @26.5GHz
Loss Stability vs. Flexure	Δ 0.1dB to 26.5GHz
Available Connector	3.5mm / HF SMA / SMA / N(18GHz)

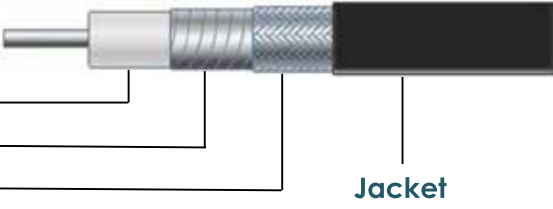
Raw Cable Insertion Loss [25°C, at Sea Level]			Average Power Rating [CW, 25°C, at Sea Level]	
Frequency	[dB/m]	[dB/FT]	Frequency	[Watt]
1 GHz	-0.25	-0.076	1 GHz	696
3 GHz	-0.45	-0.137	3 GHz	398
6 GHz	-0.65	-0.198	6 GHz	285
10 GHz	-0.88	-0.268	10 GHz	220
12 GHz	-0.97	-0.296	12 GHz	201
18 GHz	-1.25	-0.381	18 GHz	164
26.5 GHz	-1.55	-0.473	26.5 GHz	136

Microwave Cable

DC ~ 26.5GHz phase stable cable

Cable Part Number : CSVS1 (DC ~ 26.5 GHz)

Construction



Stranded

Center Conductor

Aeroflon®

1st Shield(Flat wire)

2nd Shield(Round wire)

Jacket

Part	Material	Diameter
1	Center Conductor	Silver Plated Copper [Stranded] Φ 19 / 0.287 [mm] Φ 19 / 0.0113 [inch]
2	Dielectric	Aeroflon® [Extruded]
3	1 st / 2 nd Shield	Silver Plated Copper
4	Jacket	High Temperature Resin Φ 6.20 ± 0.1 [mm] Φ 0.244 ± 0.003 [inch]

Electrical & Mechanical specification

Characteristic Impedance	50 ± 1 Ω
Operating Frequency	DC to 26.5 GHz
Temperature	-50 °C ~ +135 °C
Velocity of Propagation	77% nominal
Minimum Bend Radius	30 mm / 1.18 inch
Weight [g/m]	75
Shielding Effectiveness	<-90 dB
Phase Stability vs. Flexure	6° max. @26.5GHz
Loss Stability vs. Flexure	Δ 0.1dB to 26.5GHz
Available Connector	3.5mm / HF SMA / SMA / N(18GHz)

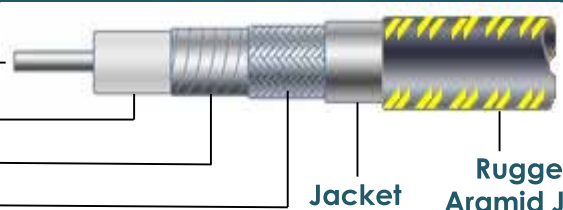
Raw Cable Insertion Loss [25°C, at Sea Level]			Average Power Rating [CW, 25°C, at Sea Level]	
Frequency	[dB/m]	[dB/FT]	Frequency	[Watt]
1 GHz	-0.25	-0.076	1 GHz	665
3 GHz	-0.45	-0.137	3 GHz	371
6 GHz	-0.65	-0.198	6 GHz	272
10 GHz	-0.88	-0.268	10 GHz	211
12 GHz	-0.97	-0.296	12 GHz	192
18 GHz	-1.25	-0.381	18 GHz	157
26.5 GHz	-1.55	-0.473	26.5 GHz	130

Microwave Cable

DC ~ 26.5GHz phase stable cable

Cable Part Number : CSVA1 (DC ~ 26.5 GHz)

Construction



Stranded

Center Conductor

Aeroflon®

1st Shield (Flat wire)

2nd Shield (Round wire)

Jacket

Ruggedized Aramid Jacket

Part	Material	Diameter
1	Center Conductor	Silver Plated Copper [Stranded] Φ 19 / 0.287 [mm] Φ 19 / 0.0113 [inch]
2	Dielectric	Aeroflon® [Extruded]
3	1 st / 2 nd Shield	Silver Plated Copper
4	Jacket	Ruggedized Aramid Yarn Φ 6.90 ± 0.1 [mm] Φ 0.271 ± 0.003 [inch]

Electrical & Mechanical specification

Characteristic Impedance	50 ± 1 Ω
Operating Frequency	DC to 26.5 GHz
Temperature	-50 °C ~ +135 °C
Velocity of Propagation	77% nominal
Minimum Bend Radius	30 mm / 1.18 inch
Weight [g/m]	83
Shielding Effectiveness	<-90 dB
Phase Stability vs. Flexure	6° max. @26.5GHz
Loss Stability vs. Flexure	Δ 0.1dB to 26.5GHz
Available Connector	3.5mm / HF SMA / SMA / N(18GHz)

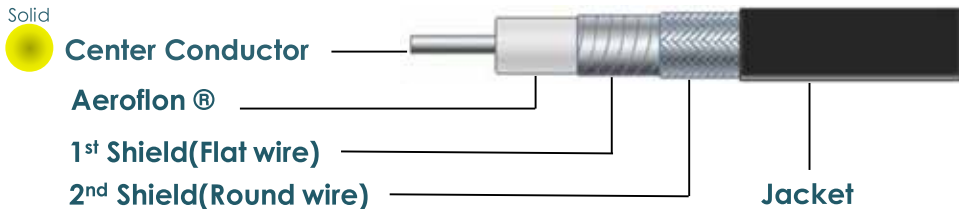
Raw Cable Insertion Loss [25°C, at Sea Level]			Average Power Rating [CW, 25°C, at Sea Level]	
Frequency	[dB/m]	[dB/FT]	Frequency	[Watt]
1 GHz	-0.25	-0.076	1 GHz	665
3 GHz	-0.45	-0.137	3 GHz	371
6 GHz	-0.65	-0.198	6 GHz	272
10 GHz	-0.88	-0.268	10 GHz	211
12 GHz	-0.97	-0.296	12 GHz	192
18 GHz	-1.25	-0.381	18 GHz	157
26.5 GHz	-1.55	-0.473	26.5 GHz	130

Microwave Cable

DC ~ 26.5GHz phase stable cable

Cable Part Number : CSVS2d (DC ~ 33 GHz for 5G Network)

Construction



Solid

Center Conductor

Aeroflon®

1st Shield(Flat wire)

2nd Shield(Round wire)

Jacket

Part	Material	Diameter
1	Center Conductor	Silver Plated Copper [Solid] Φ 1.12 [mm] Φ 0.044 [inch]
2	Dielectric	Aeroflon® [Extruded]
3	1 st / 2 nd Shield	Silver Plated Copper
4	Jacket	High Temperature Resin Φ 5.20 ± 0.1 [mm] Φ 0.204 ± 0.003 [inch]

Electrical & Mechanical specification

Characteristic Impedance	50 ± 1 Ω
Operating Frequency	DC to 33 GHz
Temperature	-50 °C ~ +135 °C
Velocity of Propagation	77% nominal
Minimum Bend Radius	25 mm / 0.98 inch
Weight [g/m]	56
Shielding Effectiveness	<-90 dB
Phase Stability vs. Flexure	10° max. @33GHz
Loss Stability vs. Flexure	Δ 0.1dB to 33GHz
Available Connector	HF SMA

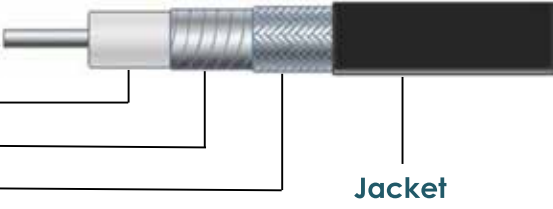
Raw Cable Insertion Loss [25°C, at Sea Level]			Average Power Rating [CW, 25°C, at Sea Level]	
Frequency	[dB/m]	[dB/FT]	Frequency	[Watt]
1 GHz	- 0.31	- 0.095	1 GHz	561
3 GHz	- 0.55	- 0.168	3 GHz	324
6 GHz	- 0.67	- 0.204	6 GHz	229
12 GHz	- 1.05	- 0.320	12 GHz	162
18 GHz	- 1.30	- 0.396	18 GHz	133
28 GHz	- 1.70	- 0.518	28 GHz	106
33 GHz	- 1.85	- 0.564	33 GHz	98

Microwave Cable

DC ~ 33GHz phase stable cable

Cable Part Number : CSVS2 (DC ~ 33 GHz for 5G Network)

Construction



Stranded

Center Conductor

Aeroflon®

1st Shield(Flat wire)

2nd Shield(Round wire)

Jacket

Part	Material	Diameter
1	Center Conductor	Silver Plated Copper [Stranded] Φ 19 / 0.225 [mm] Φ 19 / 0.0088 [inch]
2	Dielectric	Aeroflon® [Extruded]
3	1 st / 2 nd Shield	Silver Plated Copper
4	Jacket	High Temperature Resin Φ 5.20 ± 0.1 [mm] Φ 0.204 ± 0.003 [inch]

Electrical & Mechanical specification

Characteristic Impedance	50 ± 1 Ω
Operating Frequency	DC to 33 GHz
Temperature	-50 °C ~ +135 °C
Velocity of Propagation	77% nominal
Minimum Bend Radius	25 mm / 0.98 inch
Weight [g/m]	55.5
Shielding Effectiveness	<-90 dB
Phase Stability vs. Flexure	10° max. @33GHz
Loss Stability vs. Flexure	Δ 0.1dB to 33GHz
Available Connector	HF SMA

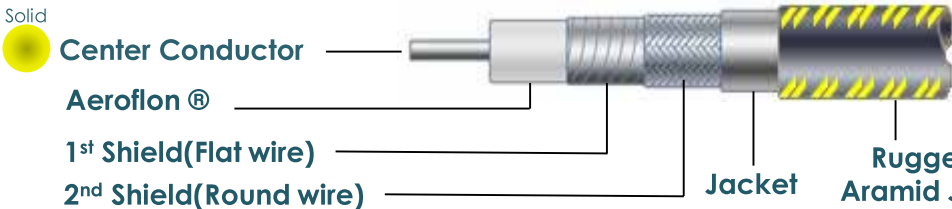
Raw Cable Insertion Loss [25°C, at Sea Level]			Average Power Rating [CW, 25°C, at Sea Level]	
Frequency	[dB/m]	[dB/FT]	Frequency	[Watt]
1 GHz	- 0.33	- 0.101	1 GHz	505
3 GHz	- 0.56	- 0.171	3 GHz	292
6 GHz	- 0.75	- 0.229	6 GHz	206
12 GHz	- 1.07	- 0.326	12 GHz	146
18 GHz	- 1.40	- 0.427	18 GHz	119
28 GHz	- 1.79	- 0.546	28 GHz	96
33 GHz	- 2.00	- 0.610	33 GHz	88

Microwave Cable

DC ~ 33GHz phase stable cable

Cable Part Number : CSVA2d (DC ~ 33 GHz for 5G Network)

Construction



Solid
Center Conductor
Aeroflon®
1st Shield(Flat wire)
2nd Shield(Round wire)
Jacket
Ruggedized Aramid Jacket

Part	Material	Diameter
1	Center Conductor	Silver Plated Copper [Solid] Φ 1.12 [mm] Φ 0.044 [inch]
2	Dielectric	Aeroflon® [Extruded]
3	1 st / 2 nd Shield	Silver Plated Copper
4	Jacket	Ruggedized Aramid Yarn Φ 5.80 ± 0.1 [mm] Φ 0.228 ± 0.003 [inch]

Electrical & Mechanical specification

Characteristic Impedance	50 ± 1 Ω
Operating Frequency	DC to 33 GHz
Temperature	-50 °C ~ +135 °C
Velocity of Propagation	77% nominal
Minimum Bend Radius	25 mm / 0.98 inch
Weight [g/m]	62
Shielding Effectiveness	<-90 dB
Phase Stability vs. Flexure	10° max. @33GHz
Loss Stability vs. Flexure	Δ 0.1dB to 33GHz
Available Connector	HF SMA

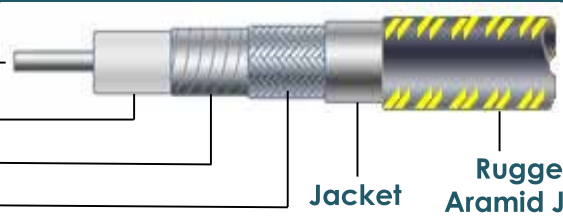
Raw Cable Insertion Loss [25°C, at Sea Level]			Average Power Rating [CW, 25°C, at Sea Level]	
Frequency	[dB/m]	[dB/FT]	Frequency	[Watt]
1 GHz	- 0.31	- 0.095	1 GHz	561
3 GHz	- 0.55	- 0.168	3 GHz	324
6 GHz	- 0.67	- 0.204	6 GHz	229
12 GHz	- 1.05	- 0.320	12 GHz	162
18 GHz	- 1.30	- 0.396	18 GHz	133
28 GHz	- 1.70	- 0.518	28 GHz	106
33 GHz	- 1.85	- 0.564	33 GHz	98

Microwave Cable

DC ~ 33GHz phase stable cable

Cable Part Number : CSVA2 (DC ~ 33 GHz for 5G Network)

Construction



Stranded

Center Conductor

Aeroflon®

1st Shield(Flat wire)

2nd Shield(Round wire)

Jacket

Ruggedized Aramid Jacket

Part	Material	Diameter
1	Center Conductor	Silver Plated Copper [Stranded] Φ 19 / 0.225 [mm] Φ 19 / 0.0088 [inch]
2	Dielectric	Aeroflon® [Extruded]
3	1 st / 2 nd Shield	Silver Plated Copper
4	Jacket	Ruggedized Aramid Yarn Φ 5.80 ± 0.1 [mm] Φ 0.228 ± 0.003 [inch]

Electrical & Mechanical specification

Characteristic Impedance	50 ± 1 Ω
Operating Frequency	DC to 33 GHz
Temperature	-50 °C ~ +135 °C
Velocity of Propagation	77% nominal
Minimum Bend Radius	25 mm / 0.98 inch
Weight [g/m]	62
Shielding Effectiveness	<-90 dB
Phase Stability vs. Flexure	10° max. @33GHz
Loss Stability vs. Flexure	Δ 0.1dB to 33GHz
Available Connector	HF SMA

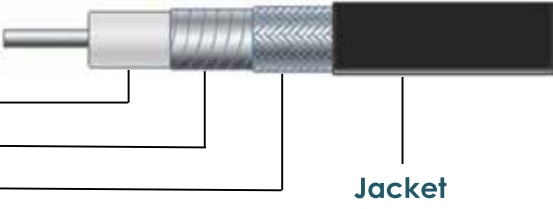
Raw Cable Insertion Loss [25°C, at Sea Level]			Average Power Rating [CW, 25°C, at Sea Level]	
Frequency	[dB/m]	[dB/FT]	Frequency	[Watt]
1 GHz	- 0.33	- 0.101	1 GHz	505
3 GHz	- 0.56	- 0.171	3 GHz	292
6 GHz	- 0.75	- 0.229	6 GHz	206
12 GHz	- 1.07	- 0.326	12 GHz	146
18 GHz	- 1.40	- 0.427	18 GHz	119
28 GHz	- 1.79	- 0.546	28 GHz	96
33 GHz	- 2.00	- 0.610	33 GHz	88

Microwave Cable

DC ~ 33GHz phase stable cable

Cable Part Number : CSVS4 (DC ~ 40 GHz)

Construction



Stranded

Center Conductor

Aeroflon®

1st Shield(Flat wire)

2nd Shield(Round wire)

Jacket

Part	Material	Diameter
1	Center Conductor	Silver Plated Copper [Stranded] Φ 19 / 0.18 [mm] Φ 19 / 0.0070 [inch]
2	Dielectric	Aeroflon® [Extruded]
3	1 st / 2 nd Shield	Silver Plated Copper
4	Jacket	High Temperature Resin Φ 5.10 ± 0.1 [mm] Φ 0.200 ± 0.003 [inch]

Electrical & Mechanical specification

Characteristic Impedance	50 ± 1 Ω
Operating Frequency	DC to 40 GHz
Temperature	-50 °C ~ +135 °C
Velocity of Propagation	77% nominal
Minimum Bend Radius	25 mm / 0.98 inch
Weight [g/m]	55
Shielding Effectiveness	<-90 dB
Phase Stability vs. Flexure	12° max. @40GHz
Loss Stability vs. Flexure	Δ 0.1dB to 40GHz
Available Connector	2.92mm (K)

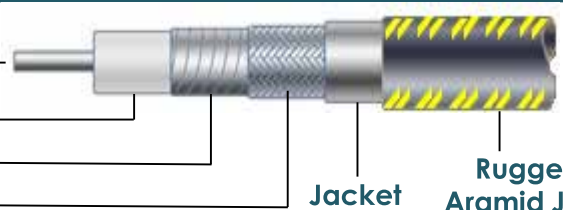
Raw Cable Insertion Loss [25°C, at Sea Level]			Average Power Rating [CW, 25°C, at Sea Level]	
Frequency	[dB/m]	[dB/FT]	Frequency	[Watt]
1 GHz	-0.34	-0.104	1 GHz	369
3 GHz	-0.62	-0.189	3 GHz	213
6 GHz	-0.88	-0.268	6 GHz	151
12 GHz	-1.30	-0.396	12 GHz	107
18 GHz	-1.65	-0.503	18 GHz	87
28 GHz	-2.10	-0.640	28 GHz	70
40 GHz	-2.60	-0.793	40 GHz	59

Microwave Cable

DC ~ 40GHz phase stable cable

Cable Part Number : CSVA4 (DC ~ 40 GHz)

Construction



Stranded

Center Conductor

Aeroflon®

1st Shield (Flat wire)

2nd Shield (Round wire)

Jacket

Ruggedized Aramid Jacket

Part	Material	Diameter
1	Center Conductor	Silver Plated Copper [Stranded] Φ 19 / 0.18 [mm] Φ 19 / 0.0070 [inch]
2	Dielectric	Aeroflon® [Extruded]
3	1 st / 2 nd Shield	Silver Plated Copper
4	Jacket	Ruggedized Aramid Yarn Φ 5.70 ± 0.1 [mm] Φ 0.200 ± 0.003 [inch]

Electrical & Mechanical specification

Characteristic Impedance	50 ± 1 Ω
Operating Frequency	DC to 40 GHz
Temperature	-50 °C ~ +135 °C
Velocity of Propagation	77% nominal
Minimum Bend Radius	25 mm / 0.98 inch
Weight [g/m]	60
Shielding Effectiveness	<-90 dB
Phase Stability vs. Flexure	12° max. @40GHz
Loss Stability vs. Flexure	Δ 0.1dB to 40GHz
Available Connector	2.92mm (K)

Raw Cable Insertion Loss [25°C, at Sea Level]			Average Power Rating [CW, 25°C, at Sea Level]	
Frequency	[dB/m]	[dB/FT]	Frequency	[Watt]
1 GHz	-0.34	-0.104	1 GHz	369
3 GHz	-0.62	-0.189	3 GHz	213
6 GHz	-0.88	-0.268	6 GHz	151
12 GHz	-1.30	-0.396	12 GHz	107
18 GHz	-1.65	-0.503	18 GHz	87
28 GHz	-2.10	-0.640	28 GHz	70
40 GHz	-2.60	-0.793	40 GHz	59

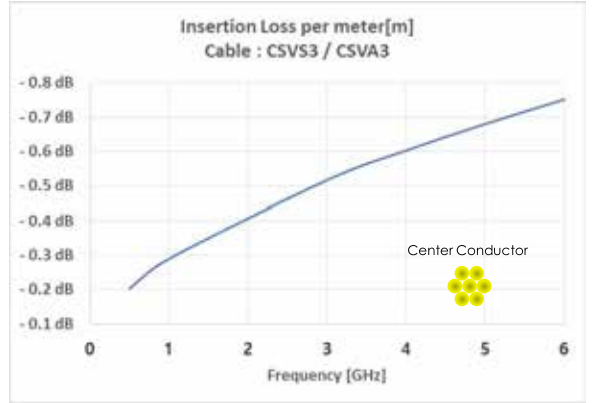
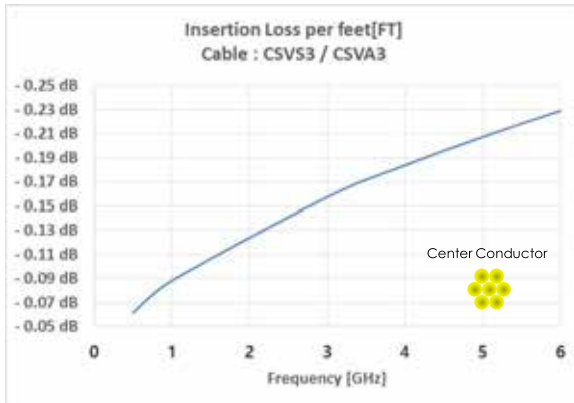
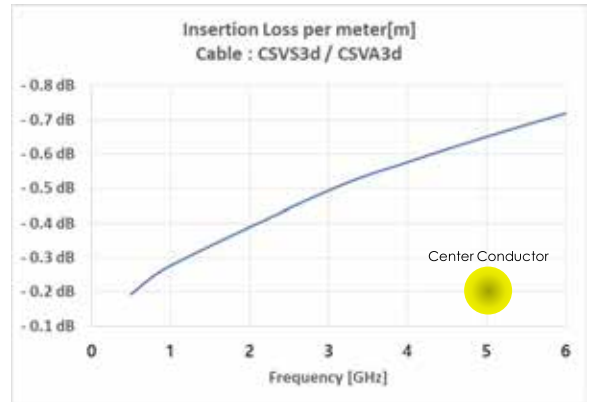
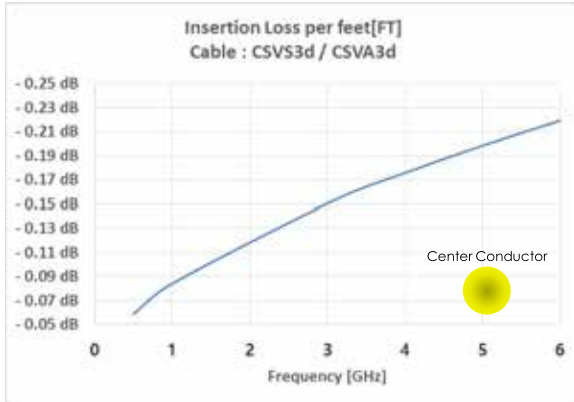
Microwave Cable

DC ~ 40GHz phase stable cable

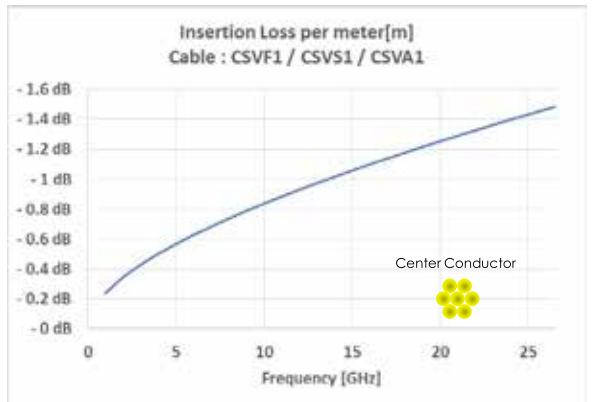
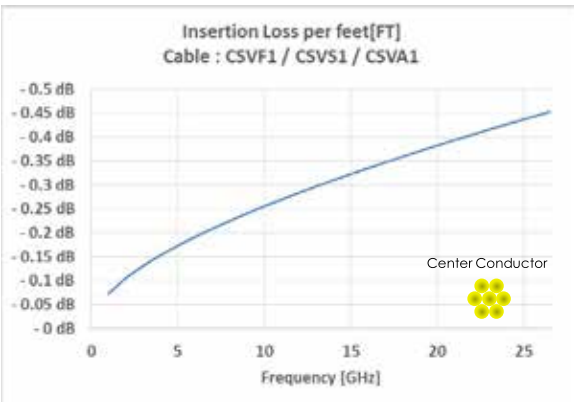
Performance Data (Loss & Stability)

Insertion loss

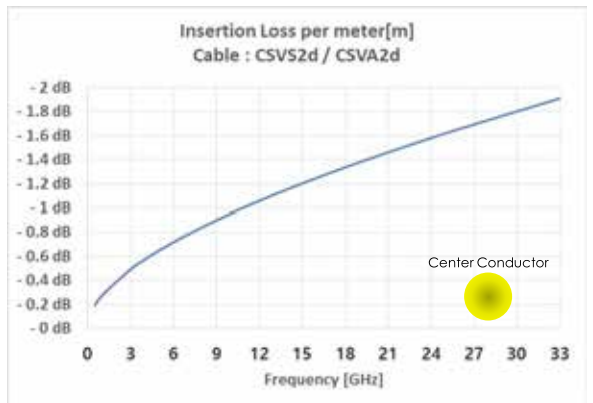
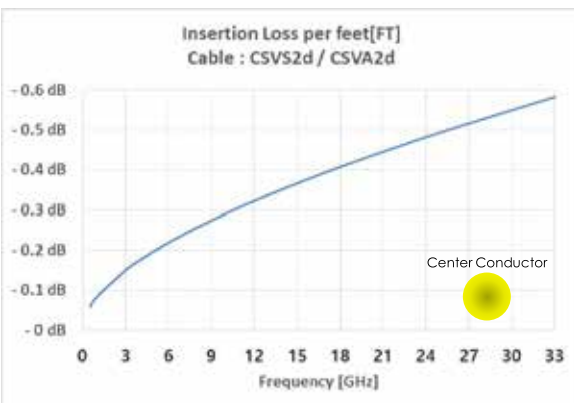
DC ~ 66GHz



DC ~ 26.5GHz



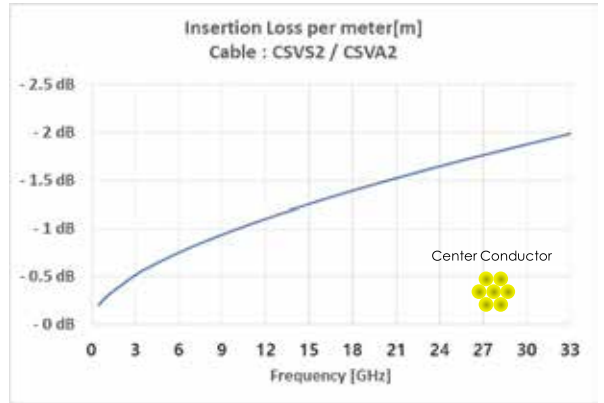
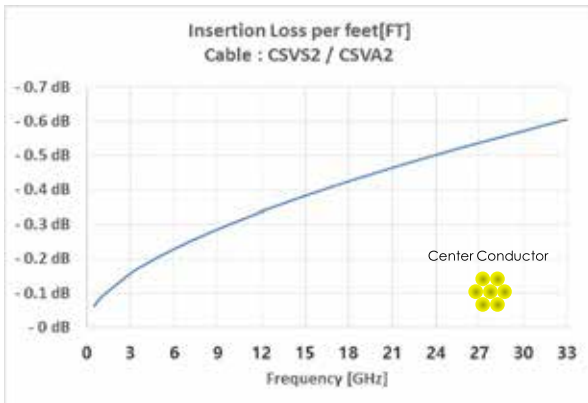
DC ~ 33GHz



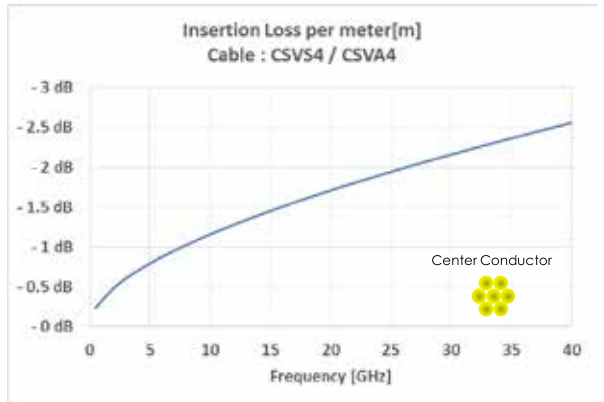
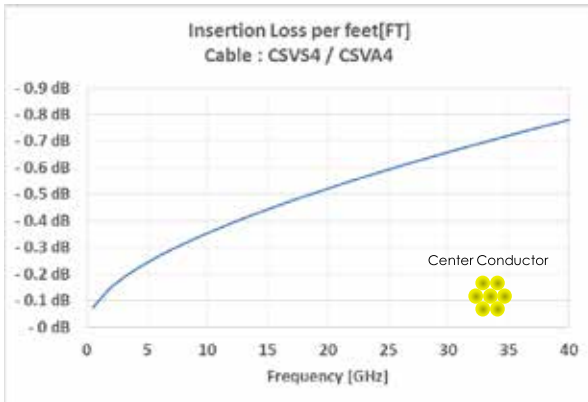
* Temperature 25°C / 1 atm (sea level)

Performance Data (Loss & Stability)

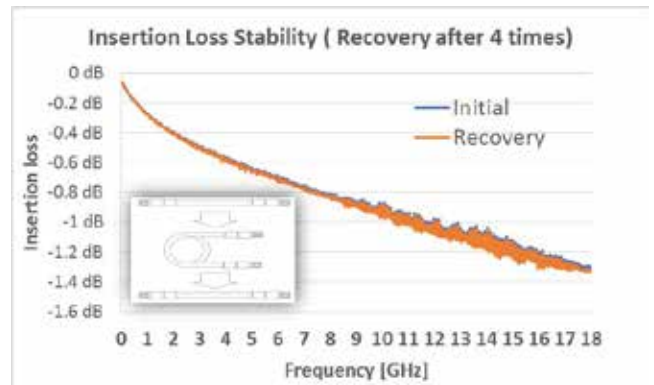
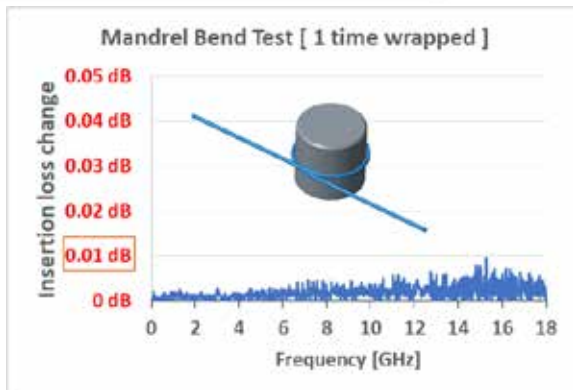
DC ~ 33GHz



DC ~ 40GHz

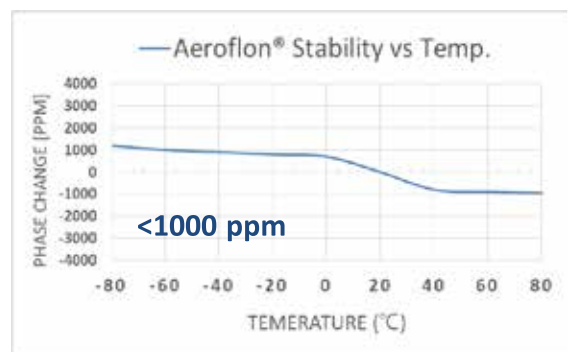
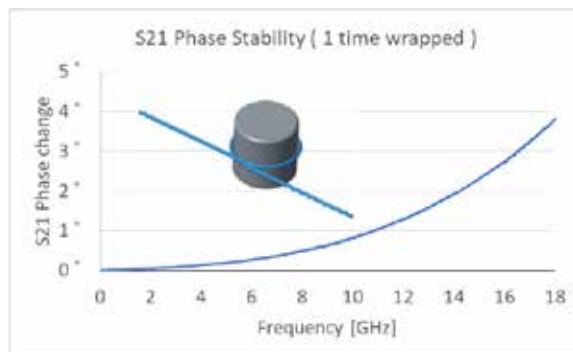


Insertion loss stability



* DUT : SMA(m) – CSAV1 – SMA(m) – 1,000 mm

Phase stability



Phase Stability vs. Bending

Phase Stability vs. Temperature

Phase Matched Cable Assembly

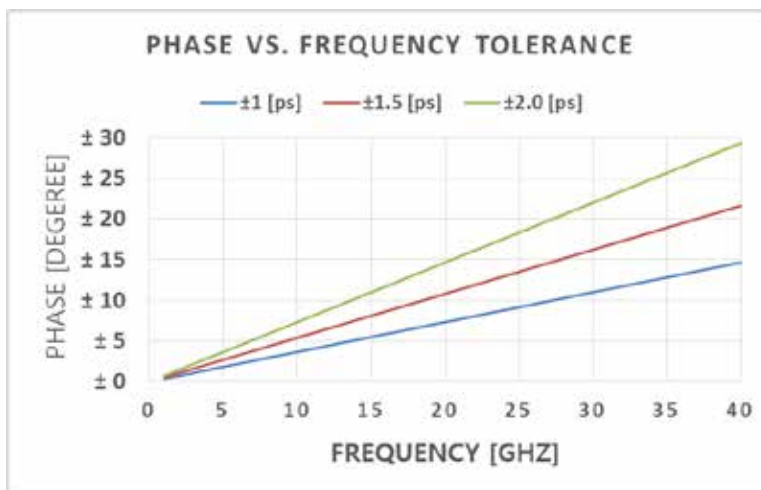
Relative matching

Consists of matching two (one pair) or more assemblies relative to each other. So cable assemblies that are ordered as sets with relative phase tolerance. Sensorview's default phase matching tolerance is $\pm 0.3^\circ/\text{GHz}$. (e.g. an 18GHz cable can be phase matched to $\pm 9^\circ$)

Absolute matching

Consists of matching assemblies to an absolute electrical length (Group delay). Sensorview precision cutting tools that can achieve very close tolerance in phase matched sets with precision coaxial connectors.

Phase vs. time vs. Frequency

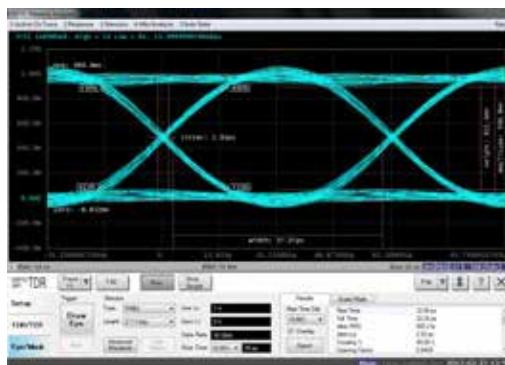


Test Data

Eye Pattern



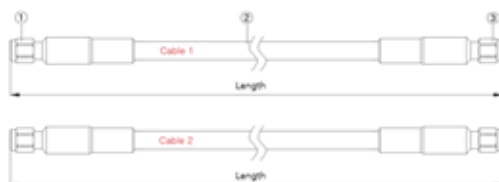
Cable 1 : SMA(m) – CSVA1 – SMA(m) – 39.4 inch



Cable 2 : SMA(m) – CSVA1 – SMA(m) – 39.4 inch

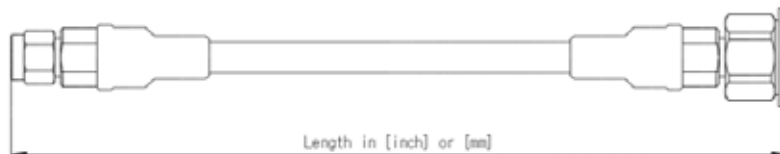
Tr / Tf (skew)

	Cable 1	Cable 2	Δ [ps]
Rise Time[ps]	32.63	32.66	0.03
Fall Time[ps]	32.24	32.24	0



Part Number for ordering

Example of SMA to N cable assembly



SMA(m)ST – CSVA1 – N(m)ST – 1000mm



Sequence	Designation
1	SMA male straight
2	CSVA1 Series Cable
3	Type N male straight
4	Assembly Length in [mm]

Coaxial connector and specification

Connector Insertion Loss & VSWR

Frequency (Type)	Connector			ELECTRICAL PERFORMANCE	
	SMA	N	K(2.92)	IL dB/ft [dB/m]	VSWR
18 GHz(SMA/N), 26.5 GHz(SMA) 40 GHz(2.92mm)	✓	✓	✓	N : -0.05 dB @ 18GHz SMA : - 0.07 dB @ 18GHz K : - 0.12 dB @ 40GHz	1.22 : 1

SMA(m) 18GHz Straight Part No. : SMA(M)ST	N(m) 18GHz Straight Part No. : N(M)ST	K(m) 40GHz Straight Part No. : K(M)ST
SMA(m) 26.5GHz Straight Part No. : SMA(M)ST1		

Available Connectors

SMA(M) Right Angle
N(M) Right Angle
TNC(M), TNC(F)
ATCN(M)
4.3-10(M)
3.5mm(M), 3.5mm(F)
SMP(M)