

# SUCOFLEX® 500

High performance  
up to 70 GHz



# SUCOFLEX 500

When it comes to test and measurement, the SUCOFLEX 500 assemblies guarantee the highest level of satisfaction. Thanks to their unique cable and connector design, they deliver the best phase and amplitude stability versus flexure, movement, temperature and tensile stress, in combination with outstanding return and insertion loss up to 70 GHz.

Due to the rotary swaged low-loss inner conductor and the rugged construction, SUCOFLEX 500 assemblies typically withstand more than 100,000 flexures without degradation of performance and therefore have a very long life-time.

HUBER+SUHNER supplies all SUCOFLEX 500 standard length products within five working days and customised lengths are available within ten working days worldwide.



Short delivery time



Outstanding performance



Excellent price-performance ratio

## SUCOFLEX 526S

26.5 GHz

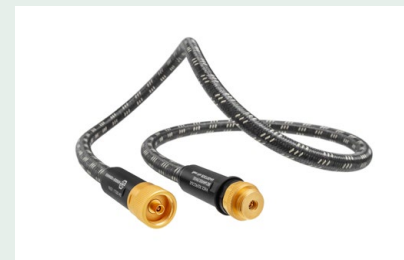
- Very long life time (>100'000 flex cycles)
- Excellent insertion loss
- Outstanding phase and amplitude stability with flexure and movement



## SUCOFLEX 526V

26.5 GHz

- Extremely flexible and ease of handling
- High stable electrical performance
- Best-in-class phase and amplitude stability with flexure, movement, temperature and tensile stress



## SUCOFLEX 550, 550E, 550EA, 550S

40-50 GHz

- Very long life time (>100'000 flex cycles)
- Excellent insertion loss
- Outstanding phase and amplitude stability with flexure and movement



## SUCOFLEX 570, 570E, 570S

70 GHz

- Very long life time (>20'000 Flex cycles)
- Excellent insertion loss
- Outstanding phase and amplitude stability with flexure and movement



### Applications

- Bench top testing
- RF production testing
- Automated test equipment
- Vector network analyzers (VNAs)
- Scalar analyzers
- Portable test equipment
- RF module testing
- High speed digital testing (HSDT)

# SUCOFLEX 526S – 26.5 GHz



## Mechanical data

Frequency	26.5 GHz
Cable	SUCOFLEX 526S
Connectors	3.5 mm, SMA, N
Diameter (mm)	7.7
Min. bending radius (mm)	25.4
Typ. flex life (cycles)	> 100'000
Min. assembly length (mm)	300
Max. assembly length (mm)	50'000
Relative time delay matching: +/-1 ps	available on request
Relative time delay matching: +/-0.5 ps per pair	available on request

## Environmental data

Operating temperature (°C)	-55 to +125
2011/65/EC (RoHS)	compliant
2006/1907/EC (REACH)	compliant
2012/19/EU (WEEE)	relevant

## Electrical data

Impedance (Ω)	50
Velocity of propagation (%)	77
Typ. return loss (dB)	25
Min. return loss (dB)	19
Typ. insertion loss assembly (dB/m)	1.63
Max. insertion loss assembly (dB/m)	1.77
Min. screening effectiveness (dB) up to 18 GHz	90
Typ. amplitude stability vs. movement (dB)	± 0.05
Typ. amplitude stability vs. flexure (dB)	± 0.05
Typ. phase stability vs. bending (°)	± 3.0
Relative time delay matching: +/-1 ps	available on request
Relative time delay matching: +/-0.5 ps per pair	available on request

## SUCOFLEX 526S stock assemblies

Art. No	Cable	Connector 1	Connector 2	Length (mm)	Length (inch)	Frequency (GHz)	max. IL (dB)	min. RL (dB)
85154814	SF526S/11PC35/11PC35/24inch	3.5 mm male	3.5 mm male	610	24	26.5	1.18	19.0
85088164	SF526S/11PC35/11PC35/36inch	3.5 mm male	3.5 mm male	914	36	26.5	1.64	19.0
85092086	SF526S/11PC35/11PC35/48inch	3.5 mm male	3.5 mm male	1219	48	26.5	2.10	19.0

## Absolute time delay matched stock assemblies

Art. No	Part no.	Connector 1	Connector 2	Length (mm)	Length (inch)	Frequency (GHz)	max. IL (dB)	Min. RL (dB)	Absolute time delay matching
85185119	PMA SF526S/11PC35/11PC35/24in	3.5 mm male	3.5 mm male	610	24	26.5	1.18	19.0	± 1ps
85185120	PMA SF526S/11PC35/11PC35/36in	3.5 mm male	3.5 mm male	914	36	26.5	1.64	19.0	± 1ps

# SUCOFLEX 526V – 26.5 GHz

## SUCOFLEX 526V

The only VNA microwave cable assembly worldwide with a typical 50 ppm phase variation vs. temperature between +15 and +30 °C. No “PTFE phase knee” at +19 °C as seen on conventional VNA test cable assemblies which cause phase variations and unstable measurements in critical laboratory conditions.



## Available assemblies

### Product configuration

Art. No.	85069744	85081169	85070046	85081172	85070047	85081177
Cable type	SUCOFLEX 526V					
Length	25" (635 mm)	25" (635 mm)	38" (965 mm)	38" (965 mm)	48" (1219 mm)	48" (1219 mm)
Connector 1	3.5 mm ruggedised PORT female (35VF)					
Connector 2	3.5 mm ruggedised DUT male (35VM)	3.5 mm DUT female (35F)	3.5 mm ruggedised DUT male (35VM)	3.5 mm DUT female (35F)	3.5 mm ruggedised DUT male (35VM)	3.5 mm DUT female (35F)

### Mechanical data

Diameter (mm)	13
Min. bending radius (mm)	50
Crush resistance (kN/m)	80
Typ. flex life (cycles)	>100 000 2.0 Mio. for slight movements

### Environmental data

Operating temperature	laboratory conditions, analyser specific (+15 to +30 °C)
2011/65/EC (RoHS)	compliant

### Electrical data

Art. No.	85069744	85081169	85070046	85081172	85070047	85081177
Impedance (Ω)	50					
Operating frequency (GHz)	up to 26.5					
Velocity of propagation (%)	80					
Time delay (ns/m)	4.15					
Return loss (dB)	typ. 25 min. 20					
Insertion loss (dB)	max. 2.5		max. 3.6		max. 4.4	
Min. screening effectiveness (dB)	> 90					
Amplitude stability vs. movement (dB)	max. 0.05					
Amplitude stability vs. flexure (dB)	max. 0.08					
Phase stability vs. flexure (°)	max. 3.9		max. 7.4		max. 10	
Phase stability vs. tensile stress (°/GHz)	max. 0.1°/GHz (100 N)					
Phase stability vs. temperature (ppm)	typ. 50 (+15 to +30 °C)					

## Order information stock assemblies

Art. No.	Description
85069744	SF526V/35VF/35VM/25in
85081169	SF526V/35VF/35F/25in
85070046	SF526V/35VF/35VM/38in
85081172	SF526V/35VF/35F/38in
85070047	SF526V/35VF/35VM/48in
85081177	SF526V/35VF/35F/48in

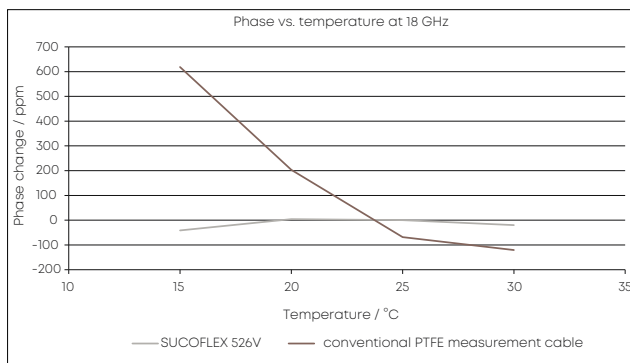
# SUCOFLEX 526V – 26.5 GHz

## Phase shift vs. temperature (+15 °C to +30 °C)

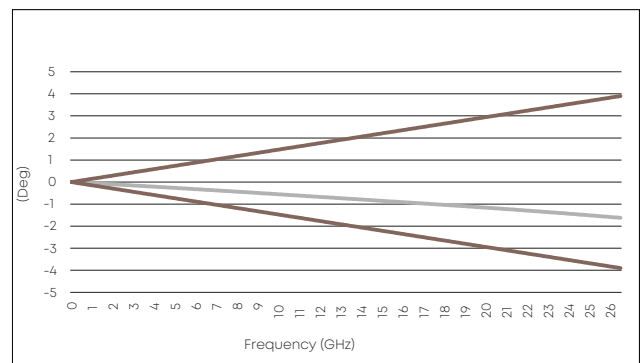
		SUCOFLEX 526V	Conventional VNA test lead
Assembly length (in (mm))	Frequency (GHz)*	Phase shift /° (for 50 ppm, 80 % VOP)	Phase shift /° (for 700 ppm, 84 % VOP)
25 (635)	18	0.9	11.4
25 (635)	26.5	1.3	16.7

\*Other frequencies on request

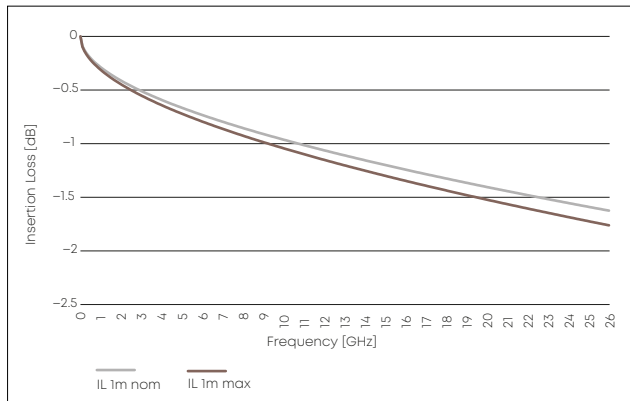
## Phase stability vs. temperature performance



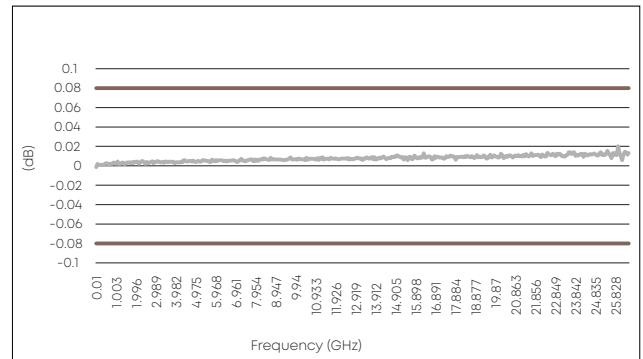
## Phase stability vs. flexure



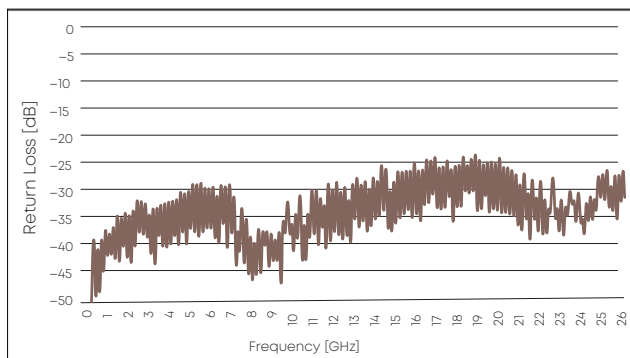
## Insertion loss



## Loss stability vs. flexure



## Return loss SUCOFLEX 526V with PC3.5 connectors



# SUCOFLEX 550 – 40/50 GHz



SUCOFLEX 550S



SUCOFLEX 550



SUCOFLEX 550E



SUCOFLEX 550EA

## Mechanical data

Frequency	40 GHz				50 GHz			
	SUCOFLEX 550	SUCOFLEX 550E	SUCOFLEX 550EA	SUCOFLEX 550S	SUCOFLEX 550	SUCOFLEX 550E	SUCOFLEX 550EA	SUCOFLEX 550S
Cable								
Connector	2.92 mm				2.4 mm			
Diameter (mm)	3.7	3.7	7.7	6.1	3.7	3.7	7.7	6.1
Outer jacket material	FEP	PUR	PUR	PTFE	FEP	PUR	PUR	PTFE
Crush resistant	no	no	yes	yes	no	no	yes	yes
Min. bending radius (mm)	11	11	20	25.4	11	11	20	25.4
Typ. flex life (cycles)	> 100 000				> 100 000			
Min. assembly length (mm)	300				300			
Max. assembly length (mm)	20 000	20 000	5 000	20 000	20 000	20 000	5 000	20 000

## Environmental data

Operating temperature (°C)	-55 to +125	-40 to +85	-40 to +85	-55 to +125	-55 to +125	-40 to +85	-40 to +85	-55 to +125
2011/65/EC (RoHS)	compliant				compliant			
2006/1907/EC (REACH)	compliant				compliant			
2012/19/EU (WEEE)	relevant				relevant			

## Electrical data

Impedance (Ω)	50							
Velocity of propagation (%)	77							
Typ. return loss (dB)	17	17	17	19	17	17	17	19
Min. return loss (dB)	15				15			
Typ. insertion loss assembly (dB/m)	3.41				3.87			
Max. insertion loss assembly (dB/m)	3.72				4.22			
Min. screening effectiveness (dB) up to 18 GHz	90				90			
Typ. amplitude stability vs. movement (dB)	± 0.1	± 0.1	± 0.1	± 0.05	± 0.1	± 0.1	± 0.1	± 0.05
Typ. amplitude stability vs. flexure (dB)	± 0.1	± 0.1	± 0.1	± 0.05	± 0.1	± 0.1	± 0.1	± 0.05
Typ. phase stability vs. flexure (°)	± 7.0	± 7.0	± 7.0	± 5.0	± 8.0	± 8.0	± 8.0	± 6.0
Relative time delay matching: +/-1 ps	available on request				available on request			
Relative time delay matching: +/-0.5 ps per pair	available on request				available on request			

# SUCOFLEX 550 – 40/50 GHz

## Stock assemblies

Art. No	Cable	Connector 1	Connector 2	Length (mm)	Length (inch)	Frequency (GHz)	max. IL (dB)	min. RL (dB)
85185826	SF550E/11PC24/11PC24/24in	2.4 mm male	2.4 mm male	610	24	50	2.89	14.9
85157329	SF550E/11PC24/11PC24/36in	2.4 mm male	2.4 mm male	914	36	50	4.07	14.9
85120065	SF550S/11PC24/11PC24/24inch	2.4 mm male	2.4 mm male	610	24	50	2.89	14.9
85120066	SF550S/11PC24/11PC24/36inch	2.4 mm male	2.4 mm male	914	36	50	4.07	14.9
85120068	SF550S/11PC24/11PC24/48inch	2.4 mm male	2.4 mm male	1219	48	50	5.24	14.9
85120073	SF550S/11SK/11SK/24inch	2.92 mm male	2.92 mm male	610	24	40	2.58	14.9
85120074	SF550S/11SK/11SK/36inch	2.92 mm male	2.92 mm male	914	36	40	3.61	14.9
85120075	SF550S/11SK/11SK/48inch	2.92 mm male	2.92 mm male	1219	48	40	4.65	14.9

## Absolute time delay matched assemblies

Art. No	Part no.	Connector 1	Connector 2	Length (mm)	Length (inch)	Frequency (GHz)	max. IL (dB)	Min. RL (dB)	Absolute time delay matching
85169945	PMA SF550E/11PC24/11PC24/24in	2.4 mm male	2.4 mm male	610	24	50	2.89	14.9	± 1ps
85169947	PMA SF550E/11PC24/11PC24/36in	2.4 mm male	2.4 mm male	914	36	50	4.07	14.9	± 1ps
85153038	PMA SF550S/11PC24/11PC24/24in	2.4 mm male	2.4 mm male	610	24	50	2.89	14.9	± 1ps
85153039	PMA SF550S/11PC24/11PC24/36in	2.4 mm male	2.4 mm male	914	36	50	4.07	14.9	± 1ps
85185117	PMA SF550S/11SK/11SK/24in	2.92 mm male	2.92 mm male	610	24	40	2.58	14.9	± 1ps
85185118	PMA SF550S/11SK/11SK/36in	2.92 mm male	2.92 mm male	914	36	40	3.61	14.9	± 1ps



# SUCOFLEX 570 - 70 GHz



SUCOFLEX 570S



SUCOFLEX 570



SUCOFLEX 570E

## Mechanical data

Frequency	70 GHz		
Cable	SUCOFLEX 570	SUCOFLEX 570E	SUCOFLEX 570S
Connector	1.85 mm		
Diameter (mm)	3,3	3,3	5,8
Outer jacket material	FEP	PUR	PTFE
Crush resistant	no	no	yes
Min. bending Radius (mm)	11	11	25,4
Typ. Flex life (cycles)	> 20'000		
Min. assembly length (mm)	300	300	300
Max. assembly length (mm)	10'000	10'000	10'000

## Environmental data

Operating temperature (°C)	-55 to +125	-40 to +85	-55 to +125
2011/65/EC (RoHS)	compliant		
2006/1907/EC (REACH)	compliant		
2012/19/EU (WEEE)	relevant		

## Electrical data

Impedance (Ω)	50		
Velocity of propagation (%)	77		
Typ. return loss (dB)	15	15	16
Min. return loss (dB)	14	14	14
Typ. insertion loss assembly (dB/m)	6,48		
Max. insertion loss assembly (dB/m)	7,05		
Min. screening effectiveness (dB) up to 18 GHz	90		
Typ. amplitude stability vs. movement (dB)	+/- 0,10	+/- 0,10	± 0,05
Typ. amplitude stability vs. flexure (dB)	+/- 0,10	+/- 0,10	± 0,05
Typ. phase stability vs. flexure (°)	+/- 10,0	+/- 10,0	± 8,0
Relative time delay matching (+/-1ps)	available on request		
Absolute time delay matching (+/-1ps per pair)	available on request		

# SUCOFLEX 570S – 70 GHz

## Stock assemblies

Art. No	Cable	Connector 1	Connector 2	Length (mm)	Length (inch)	Frequency (GHz)	max. IL (dB)	min. RL (dB) @ 67 GHz
85184843	SF570E/11PC185/11PC185/24in	1.85 mm male	1.85 mm male	610	24	70	4.65	14.0
85184844	SF570E/11PC185/11PC185/36in	1.85 mm male	1.85 mm male	914	36	70	6.48	14.0
85186159	SF570S/11PC185/11PC185/24in	1.85 mm male	1.85 mm male	610	24	70	4.65	14.0
85149825	SF570S/11PC185/11PC185/36in	1.85 mm male	1.85 mm male	914	36	70	6.48	14.0
85186160	SF570S/11PC185/11PC185/48in	1.85 mm male	1.85 mm male	1219	48	70	8.50	14.0

## Absolute time delay matched assemblies

Art. No	Part no.	Connector 1	Connector 2	Length (mm)	Length (inch)	Frequency (GHz)	max. IL (dB)	Min. RL (dB) @ 67 GHz	Absolute time delay matching
85184845	PMA SF570E/11PC185/11PC185/24in	1.85 mm male	1.85 mm male	610	24	70	4.65	14.0	± 1ps
85184846	PMA SF570E/11PC185/11PC185/36in	1.85 mm male	1.85 mm male	914	36	70	6.48	14.0	± 1ps
85153051	PMA SF570S/11PC185/11PC185/24in	1.85 mm male	1.85 mm male	610	24	70	4.65	14.0	± 1ps
85153052	PMA SF570S/11PC185/11PC185/36in	1.85 mm male	1.85 mm male	914	36	70	6.48	14.0	± 1ps

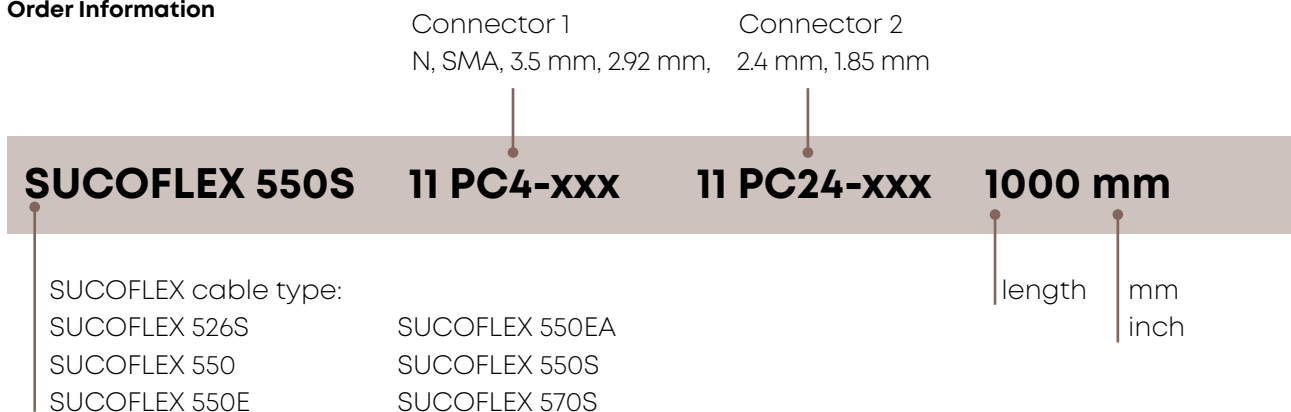
# SUCOFLEX 500

## Available connectors

Available connectors	Freq. (GHz)	SUCOFLEX 526S	SUCOFLEX 526V	SUCOFLEX 550	SUCOFLEX 550E
N straight male	18	SF_11_N-501			
N straight female	18	SF_21_N-501			
SMA straight male	18	SF_11_SMA-501			
3.5 mm straight male	26.5	SF_11_PC35-501		SF_11_PC35-505	SF_11_PC35-506
3.5 mm straight female	26.5	SF_21_PC35-501			
3.5 mm ruggedised PORT female	26.5	SF_21_PC35-502			
3.5 mm ruggedised PORT female	26.5		35VF		
3.5 mm ruggedised DUT male	26.5		35VM		
3.5 mm DUT female	26.5		35F		
2.92 mm male	40			SF_11_SK-502	SF_11_SK-503
2.92 mm female	40			SF_21_SK-502	SF_21_SK-503
2.4 mm male	50			SF_11_PC24-502	SF_11_PC24-503
2.4 mm female	50			SF_21_PC24-502	SF_21_PC24-503

Available connectors	Freq. (GHz)	SUCOFLEX 550EA	SUCOFLEX 550S	SUCOFLEX 570	SUCOFLEX 570E	SUCOFLEX 570 S
3.5 mm straight male	26.5	SF_11_PC35-507	SF_11_PC35-508			
3.5 mm DUT female	26.5					
2.92 mm male	40	SF_11_SK-504	SF_11_SK-501			
2.92 mm female	40	SF_21_SK-504	SF_21_SK-501			
2.92 mm ruggedised PORT female	40		SF_21_SK-505			
2.4 mm male	50	SF_11_PC24-504	SF_11_PC24-501			
2.4 mm female	50	SF_21_PC24-504	SF_21_PC24-501			
2.4 mm ruggedised PORT female	50		SF_21_PC24-505			
1.85 mm male	70			SF_11_PC185-502	SF_11_PC185-503	SF_11_PC185-501
1.85 mm female	70			SF_21_PC185-503	SF_21_PC185-504	SF_21_PC185-501
1.85 mm ruggedised PORT female	70					SF_21_PC185-502

## Order Information



# SUCOFLEX 500

## Connector configuration

Figure	Marketing name	Cable	B	D	SW / AF.
3	SF_21_PC35-501	SUCOFLEX_526_S	44	11.8	8
1	SF_11_PC35-501	SUCOFLEX_526_S	44	11.8	N/A
1	SF_11_SMA-501	SUCOFLEX_526_S	44	11.8	N/A
9	SF_11_N-501	SUCOFLEX_526_S	75.5	15.6	N/A
10	SF_21_N-501	SUCOFLEX_526_S	62	15.6	14
5	SF_21_PC35-502	SUCOFLEX_526_S	61	19.8	20
7	35VM	SUCOFLEX_526_V	69.5	19.8	N/A
5	35VF	SUCOFLEX_526_V	69.5	19.8	20
8	35F	SUCOFLEX_526_V	69.5	19.8	20
1	SF_11_SK-501	SUCOFLEX_550_S	44.5	9.2	N/A
3	SF_21_SK-501	SUCOFLEX_550_S	44.5	9.2	8
2	SF_11_PC24-501	SUCOFLEX_550_S	43	9.2	N/A
4	SF_21_PC24-501	SUCOFLEX_550_S	43	9.2	8
6	SF_21_PC24-505	SUCOFLEX_550_S	60	19.8	20
6	SF_21_SK-505	SUCOFLEX_550_S	61	19.8	20
1	SF_11_PC35-508	SUCOFLEX_550_S	44.5	9.2	N/A
1	SF_11_SK-502	SUCOFLEX_550	65.5	9.5	N/A
3	SF_21_SK-502	SUCOFLEX_550	65.5	9.5	8
2	SF_11_PC24-502	SUCOFLEX_550	64	9.5	N/A
4	SF_21_PC24-502	SUCOFLEX_550	64	9.5	8
1	SF_11_PC35-505	SUCOFLEX_550	65.5	9.5	N/A
1	SF_11_SK-503	SUCOFLEX_550_E	65.5	9.5	N/A
3	SF_21_SK-503	SUCOFLEX_550_E	65.5	9.5	8
2	SF_11_PC24-503	SUCOFLEX_550_E	64	9.5	N/A
4	SF_21_PC24-503	SUCOFLEX_550_E	64	9.5	8
1	SF_11_PC35-506	SUCOFLEX_550_E	65.5	9.5	N/A
1	SF_11_SK-504	SUCOFLEX_550_EA	43.5	9.2	N/A
3	SF_21_SK-504	SUCOFLEX_550_EA	43.5	9.2	8
2	SF_11_PC24-504	SUCOFLEX_550_EA	42	9.2	N/A
4	SF_21_PC24-504	SUCOFLEX_550_EA	42	9.2	8
1	SF_11_PC35-507	SUCOFLEX_550_EA	43.5	9.2	N/A
2	SF_11_PC185-501	SUCOFLEX_570_S	43	9.2	N/A
4	SF_21_PC185-501	SUCOFLEX_570_S	43	9.2	8
6	SF_21_PC185-502	SUCOFLEX_570_S	60	19.8	20
2	SF_11_PC185-502	SUCOFLEX_570	64	9.5	N/A
4	SF_21_PC185-503	SUCOFLEX_570	64	9.5	8
2	SF_11_PC185-503	SUCOFLEX_570_E	64	9.5	N/A
4	SF_21_PC185-504	SUCOFLEX_570_E	64	9.5	8

# SUCOFLEX 500

Figure 1

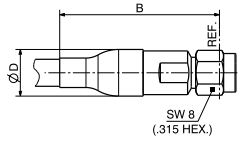


Figure 2

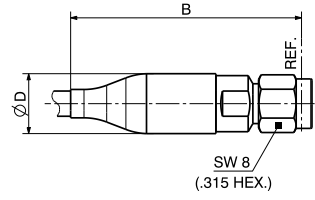


Figure 3

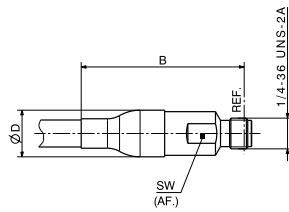


Figure 4

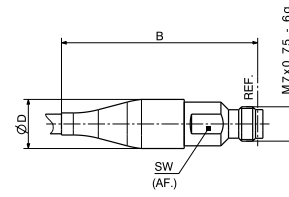


Figure 5

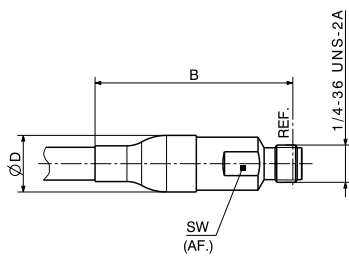
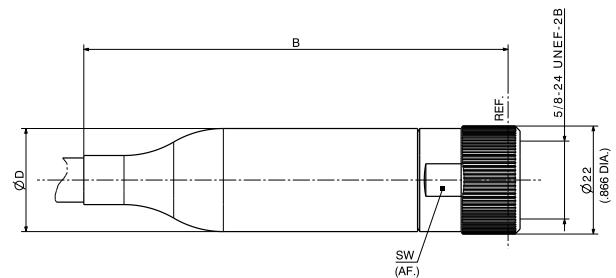


Figure 6



# SUCOFLEX 500

Figure 7

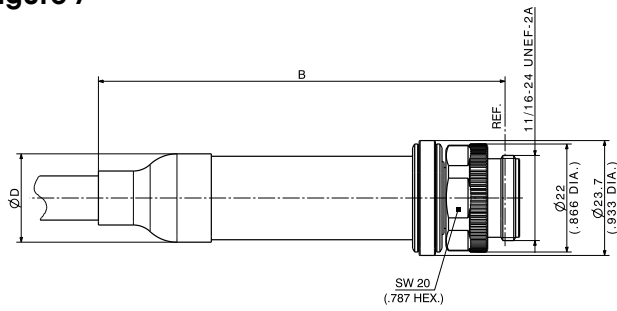


Figure 8

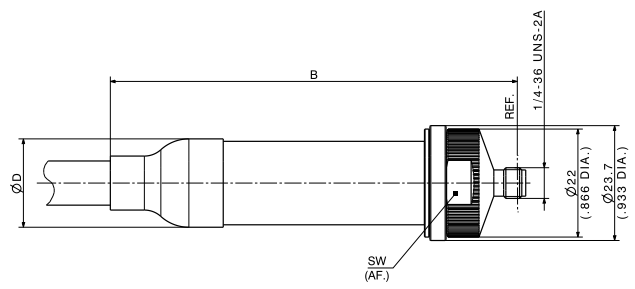


Figure 9

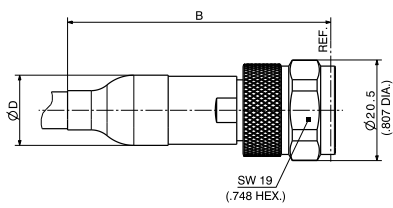
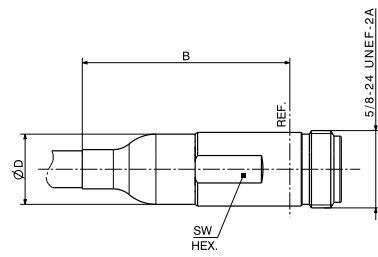


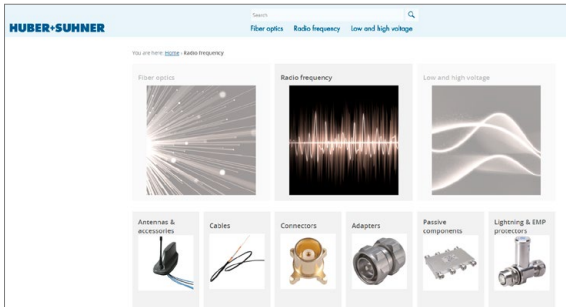
Figure 10



# Cable and assembly tools

Use our online tools for fast and efficient calculation and configuration or contact your HUBER+SUHNER partner for specific information.

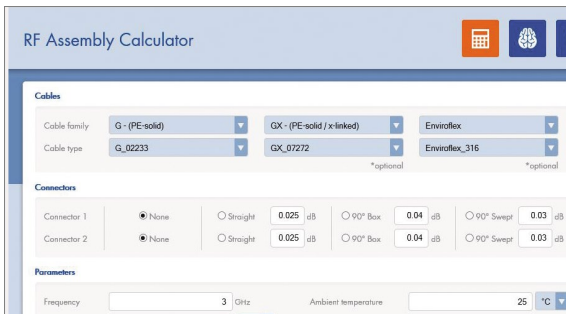
## 1. EVALUATE with our eCatalogue



Choose suitable cables by using our "eCatalogue".

<https://ecatalog.hubersuhner.com/>

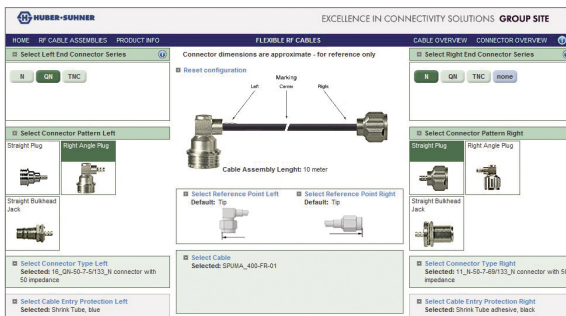
## 2. CALCULATE with the assembly calculator



Compare the suitable products and calculate the electrical performance by using the "RF assembly calculator".

<http://rfcablecalc.hubersuhner.com>

## 3. CONFIGURE with the assembly configurator



By using the "RF assembly configurator" you can define the complete assembly.

<http://rfwebpcf.hubersuhner.com>

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HUBER+SUHNER is certified to ISO 9001, ISO 14001, ISO 45001, EN/AS 9100, IATF 16949 and ISO/TS 22163-IRIS.

**Waiver**

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