ELMfirst
Fiber RF Systems

Neoflex™

Low Loss Microwave Cables Family

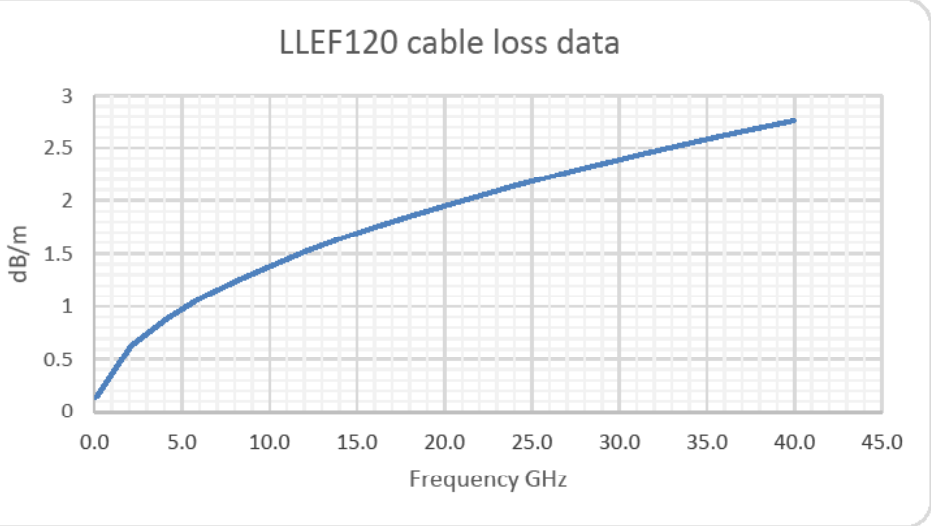
Neoflex ™

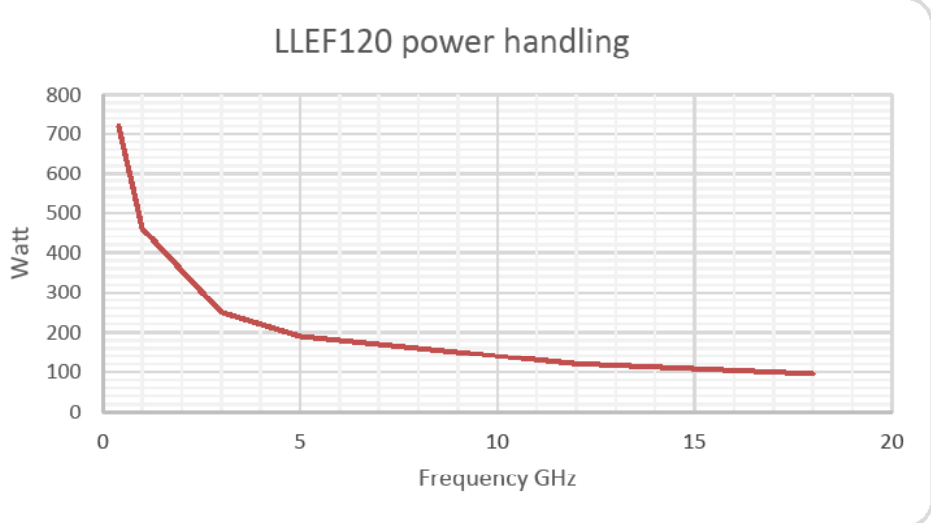
LLEF 120
MW cable up to 40GHz

Assembly types

		LLEF120	LLEF120F	LLEF120N	LLEF120S	LLEF120Z
Electrical specifications						
Cut off frequency	GHz	40	40	40	40	40
VP	%	83	83	83	83	83
Screening effectiveness (up to 18 GHz)	dB	> 95	> 100	>95	>100	>100
Phase stability vs. flexure (360°,10 X outer diameter)	deg/GHz	<0.7	< 0.7	< 0.7	< 0.7	< 0.7
Phase stability vs. temperature (–40 to +85 °C)	ppm	< 650	< 650	< 650	< 650	< 650
Assembly phase matching tolerances	deg/GHz	± 0.5	± 0.5	± 0.5	± 0.5	± 0.5
Cable attenuation at 25 °C @ 18GHz (see graph for all bands)	dB/m	1.9	1.9	1.9	1.9	1.9
Insertion loss stability vs. bending (mandrel 10 X outer diameter)	dB	± 0.2	± 0.2	± 0.2	± 0.2	± 0.2
Insertion loss stability vs. temperature	%/°C	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Power handling @ 18GHz (see graph for all bands)	Watt	95	95	95	95	95
Mechanical parameters						
Weight	g/m	25	85	68	100	100
Crush resistance	kN/m	12	80	12	120	100
Tensile load	N	125	400	125	800	600
Min. bending radius static	mm	20	28	20	40	40
Min. bending radius dynamic	mm	30	40	30	60	60
Application		Limited dynamic	Limited dynamic	Limited dynamic	Limited dynamic	Limited dynamic
Outer diameter	mm	3.04	6.0	3.1	6.2	6.5
Environmental						
Temperature range	°C	–55 to +200	–55 to +200	–55 to +200	–55 to +200	–55 to +85
Construction						
Inner conductor		solid	solid	solid	solid	solid
Dielectric		Expanded PTFE tape	Expanded PTFE tape	Expanded PTFE tape	Expanded PTFE tape	Expanded PTFE tape
Outer conductor		Tape polyimide braid	Tape polyimide braid	Tape polyimide braid	Tape polyimide braid	Tape polyimide braid
Jacket		FEP	FEP	FEP	FEP	FEP
Cable armor		no	Monocoil Nomex Silicon	Nomex Braid FR	Stainless steel squarelock	EPDM
Applications						
		Internal system	Laboratory use high- flex	Fuselage installation and flame retardant	High crush resistance and ground based use	High pressure, Water immersion

LLEF 120 | MW cable up to 40GHz





All connectors are made according to the following materials and MIL standards:	
Body of connector	Stainless steel. Corrosion-resistant, non Magnetic 303, Per ASTM A484 and A582.
Center conductor	Beryllium Copper per ASTM-B-196, QQ-C-530.
Insulator	PTFE per ASTM-D-1 710
Finish	Center Conductors and solder components Are plated per MIL-G- 45204 Type II, Class 1 Over nickel plate per QQ-N-290. Body and Body components shall be Passivated per ASTM A380.
Interface	All Connectors Interface per MIL-STD 348 and MIL-PRF- 39012 accordingly.
Environmental	All Connectors meet MIL-STD-202- per the Following tests:
Temp. Range	-54 to +155 deg C.
Thermal shock	MIL –STD 202 Meth.107 Cond B
Vibration	MIL –STD 202 Meth. 204 Cond B.
Shock	MIL–STD 202 Meth. 213 Cond I.
Waterproofing	IP67 and on selected types IP68
Material option	SS-316 per request.

Advantages of the Neoflex MW cable family

Wide temperature range

-55 to +200 °C for most cable types

-55 to +200 °C for most connector types

Mechanical protection

A wide range of armors are available for most Neoflex coble types.

Chemical stability

Thanks to excellent materials (FEP).

Lowest losses and excellent stability vs. Temperature

0.2 dB/m @ 18 GHz for Neoflex

Lowest Phase over temperature

650 ppm over -55 to +75 deg. C

High power performance

Neoflex LLEF335i withstanding

400 Watt CW @ 18 GHz

Low weight, small diameter

Neoflex family of cables use expanded PTFE tape which reduces the weight of any given cable by 20-35 % as compared to other technologies while still maintaining same electrical performance.

Likewise smaller diameter cables are achieved for same electrical performance vs. thicker cables using other technologies

Wide frequency range

Neoflex Family from DC up to 40 GHz.

Connector selection guide for cable LLEF120 family

2.92 straight plug (up to 40GHz).

SMA all range (UP TO 18 GHz).

TNC all range (UP TO 18 GHz).

N TYPE all range (UP TO 18 GHz).

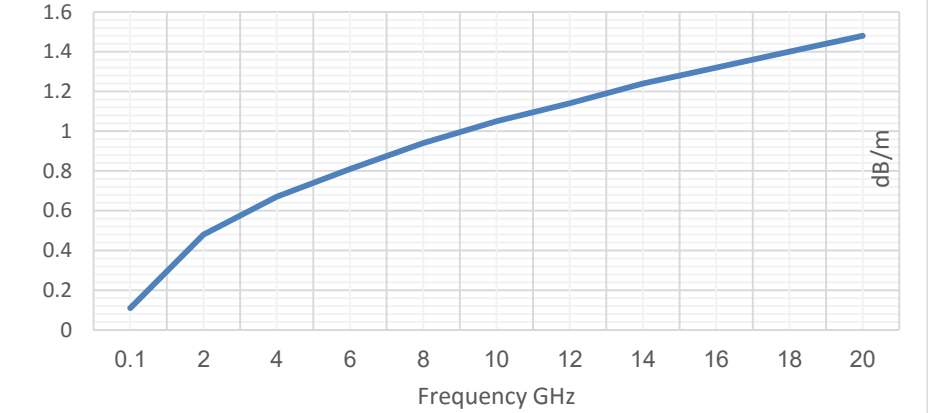
LLEF 160

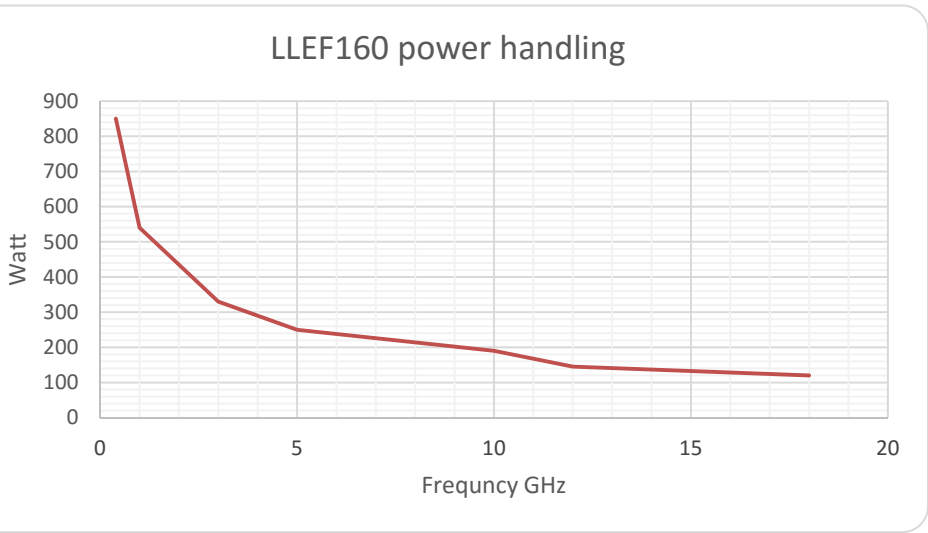
MW cable up to 40GHz

Assembly types

		LLEF160	LLEF160F	LLEF160N	LLEF160S	LLEF160Z
Electrical specifications						
Cut off frequency	GHz	40	40	40	40	40
VP	%	83	83	83	83	83
Screening effectiveness (up to 18 GHz)	dB	> 95	> 100	>95	>100	>100
Phase stability vs. flexure (360°, diameter 40 mm)	deg/GHz	<0.7	< 0.7	< 0.7	< 0.7	< 0.7
Phase stability vs. temperature (–40 to +85 °C)	ppm	< 650	< 650	< 650	< 650	< 650
Assembly phase matching tolerances	deg/GHz	± 0.5	± 0.5	± 0.5	± 0.5	± 0.5
Cable attenuation at 25 °C @ 18GHz (see graph for all bands)	dB/m	1.5	1.5	1.5	1.5	1.5
Insertion loss stability vs. bending	dB	± 0.2	± 0.2	± 0.2	± 0.2	± 0.2
Insertion loss stability vs. temperature	%/°C	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Power handling @ 18GHz (see graph for all bands)	Watt	120	120	120	120	120
Mechanical parameters						
Weight	g/m	31	96	68	118	100
Crush resistance	kN/m	12	80	12	120	100
Tensile load	N	125	400	125	800	600
Min. bending radius static	mm	20	28	20	40	40
Min. bending radius dynamic	mm	30	40	30	60	60
Application		Limited dynamic	Limited dynamic	Limited dynamic	Limited dynamic	Limited dynamic
Outer diameter	mm	4.10	6,5	4.1	6.9	7.0
Environmental						
Temperature range	°C	–55 to +200	–55 to +200	–55 to +200	–55 to +200	–55 to +85
Construction						
Inner conductor		solid	solid	solid	solid	solid
Dielectric		Expanded PTFE	Expanded PTFE	Expanded PTFE tape	Expanded PTFE tape	Expanded PTFE tape
Inner braid		Silver Plated	Silver Plated	Silver Plated Copper	Silver Plated Copper strip	Silver Plated Copper
Interlayer		Metalized Tape	Metalized Tape	Metalized Tape	Metalized Tape	Metalized Tape
Outer conductor		Silver Plated Copper Braid	Silver Plated Copper Braid	Silver Plated Copper Braid	Silver Plated Copper Braid	Silver Plated Copper Braid
Jacket		FEP	FEP	FEP	FEP	FEP
Cable armor		no	Monocoil / Nomex/ Silicon	Nomex Braid	Stainless steel squarelock	EPDM
Applications						
		Internal system	Labortory use high-flex	Fuselage installation and Flame retardant	High load and ground based use.	High pressure, Water emesion.

LLEF 160 | MW cable up to 40GHz





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Center conductor	Beryllium Copper per ASTM-B-196, QQ-C-530.
Insulator	PTFE per ASTM-D-1 710
Finish	Center Conductors and solder components Are plated per MIL-G- 45204 Type II, Class 1 Over nickel plate per QQ-N-290. Body and Body components shall be Passivated per ASTM A380.
Interface	All Connectors Interface per MIL-STD 348 and MIL-PRF- 39012 accordingly.
Environmental	All Connectors meet MIL-STD-202- per the Following tests:
Temp. Range	-54 to +155 deg C.
Thermal shock	MIL –STD 202 Meth.107 Cond B
Vibration	MIL –STD 202 Meth. 204 Cond B.
Shock	MIL–STD 202 Meth. 213 Cond I.
Waterproofing	IP67 and on selected types IP68
Material option	SS-316 per request.

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High power performance

Neoflex LLEF335i withstanding

400 Watt CW @ 18 GHz

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Wide frequency range

Neoflex Family from DC up to 40 GHz.

Connector selection guide for cable LLEF160 family

2.92 straight plug (up to 40GHz).

SMA all range (UP TO 18 GHz).

TNC all range (UP TO 18 GHz).

N TYPE all range (UP TO 18 GHz).

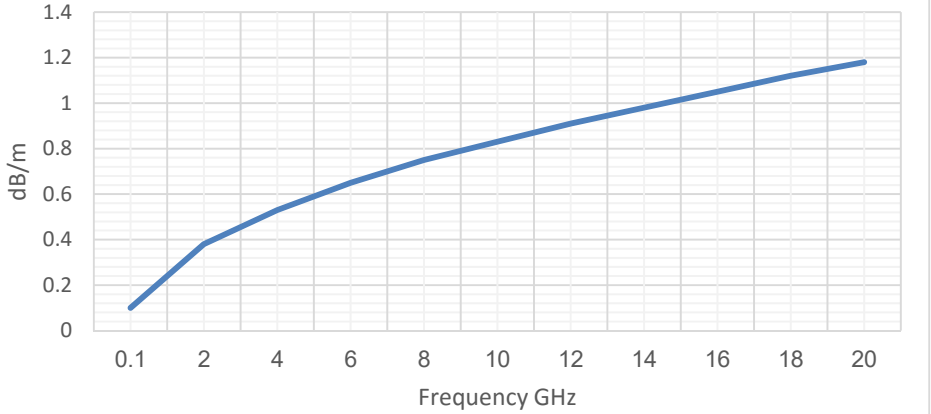
LLEF 142

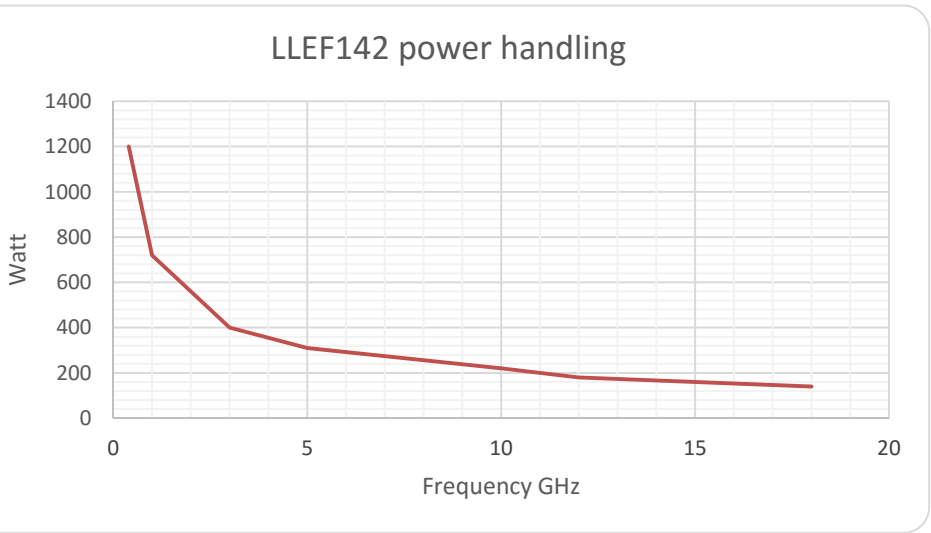
MW cable up to 26GHz

Assembly types

		LLEF142	LLEF142F	LLEF142N	LLEF142S	LLEF142Z
Electrical specifcations						
Cut off frequency	GHz	27	27	27	27	27
VP	%	83	83	83	83	83
Screening effectiveness (up to 18 GHz)	dB	> 95	> 100	>95	>100	>100
Phase stability vs. flexure (360°, diameter 40 mm)	deg/GHz	<0.7	< 0.7	< 0.7	< 0.7	< 0.7
Phase stability vs. temperature (–40 to +85 °C)	ppm	< 650	< 650	< 650	< 650	< 650
Assembly phase matching tolerances	deg/GHz	± 0.5	± 0.5	± 0.5	± 0.5	± 0.5
Cable attenuation at 25 °C @ 18GHz (see graph for all bands)	dB/m	1.1	1.1	1.1	1.1	1.1
Insertion loss stability vs. bending	dB	± 0.2	± 0.2	± 0.2	± 0.2	± 0.2
Insertion loss stability vs. temperature	%/°C	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Power handling @ 18GHz (see graph for all bands)	Watt	140	140	140	140	140
Mechanical parameters						
Weight	g/m	65	92	68	118	100
Crush resistance	kN/m	12	80	12	120	100
Tensile load	N	125	400	125	800	600
Min. bending radius static	mm	20	28	20	40	40
Min. bending radius dynamic	mm	30	40	30	60	60
Application		Limited dynamic	Limited dynamic	Limited dynamic	Limited dynamic	Limited dynamic
Outer diameter	mm	4.95	7.9	5.0	7.0	8.0
Environmental						
Temperature range	°C	–55 to +200	–55 to +200	–55 to +200	–55 to +200	–55 to +85
Construction						
Inner conductor		solid	solid	solid	solid	solid
Dielectric		Expanded PTFE	Expanded PTFE tape	Expanded PTFE tape	Expanded PTFE	Expanded PTFE tape
Inner braid		Silver Plated	Silver Plated Copper	Silver Plated Copper	Silver Plated	Silver Plated Copper
Interlayer		Metalized Tape	Metalized Tape	Metalized Tape	Metalized Tape	Metalized Tape
Outer conductor		Silver Plated Copper Braid	Silver Plated Copper Braid	Silver Plated Copper Braid	Silver Plated Copper Braid	Silver Plated Copper Braid
Jacket		FEP	FEP	FEP	FEP	FEP
Cable armor		no	Monocoil / Nomex/ Silicon	Nomex Braid	Stainless steel squarelock	EPDM
Applications						
		Internal system	Laboratory use high- flex	Fuselage installation and flame retardant	High load and ground based use	High pressure, Water immersion

LLEF 142 | MW cable up to 26GHz





All connectors are made according to the following materials and MIL standards:	
Body of connector	Stainless steel. Corrosion-resistant, non Magnetic 303, Per ASTM A484 and A582.
Center conductor	Beryllium Copper per ASTM-B-196, QQ-C-530.
Insulator	PTFE per ASTM-D-1 710
Finish	Center Conductors and solder components Are plated per MIL-G- 45204 Type II, Class 1 Over nickel plate per QQ-N-290. Body and Body components shall be Passivated per ASTM A380.
Interface	All Connectors Interface per MIL-STD 348 and MIL-PRF- 39012 accordingly.
Environmental	All Connectors meet MIL-STD-202- per the Following tests:
Temp. Range	-54 to +155 deg C.
Thermal shock	MIL –STD 202 Meth.107 Cond B
Vibration	MIL –STD 202 Meth. 204 Cond B.
Shock	MIL–STD 202 Meth. 213 Cond I.
Waterproofing	IP67 and on selected types IP68
Material option	SS-316 per request.

Advantages of the Neoflex MW cable family

Wide temperature range

-55 to +200 °C for most cable types

-55 to +200 °C for most connector types

Mechanical protection

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Chemical stability

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Lowest losses and excellent stability vs. Temperature

0.2 dB/m @ 18 GHz for Neoflex LL335i

Lowest Phase over temperature

650 ppm over -55 to +75 deg. C

High power performance

Neoflex LLEF335i withstanding

400 Watt CW @ 18 GHz

Low weight, small diameter

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Likewise smaller diameter cables are achieved for same electrical performance vs. thicker cables using other technologies

Wide frequency range

Neoflex Family from DC up to 40 GHz.

Connector selection guide for cable LLEF142 family

2.92 straight plug (up to 18GHz).

SMA all range (UP TO 18 GHz).

TNC all range (UP TO 18 GHz).

N TYPE all range (UP TO 18 GHz).

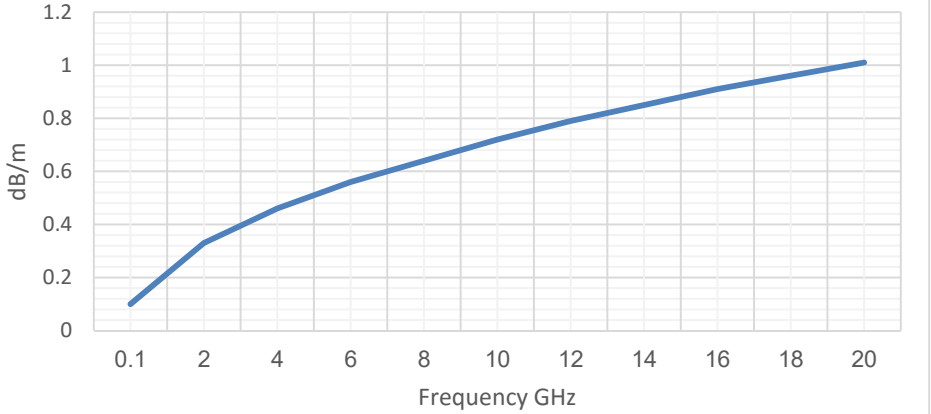
LLEF 235

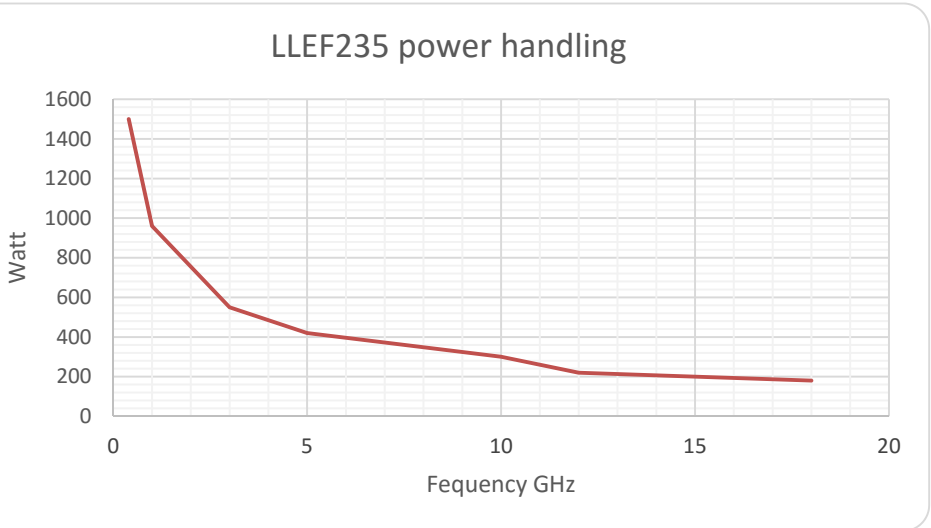
MW cable up to 18GHz

Assembly types

		LLEF235	LLEF235F	LLEF235N	LLEF235S	LLEF235Z
Electrical specifcations						
Cut off frequency	GHz	18	18	18	18	18
VP	%	83	83	83	83	83
Screening effectiveness (up to 18 GHz)	dB	> 95	> 100	>95	>100	>100
Phase stability vs. flexure (360°, diameter 40 mm)	deg/GHz	<0.7	< 0.7	< 0.7	< 0.7	< 0.7
Phase stability vs. temperature (–40to +85 °C)	ppm	< 650	< 650	<650	< 650	< 650
Assembly phase matching tolerances	deg/GHz	± 0.5	± 0.5	± 0.5	± 0.5	±0.5
Cable attenuation at 25 °C @ 18GHz (see graph for all bands)	dB/m	1.0	1.0	1.0	1.0	1.0
Insertion loss stability vs. bending	dB	± 0.2	± 0.2	± 0.2	± 0.2	± 0.2
Insertion loss stability vs. temperature	%/°C	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Power handling@ 18GHz (see graph for all bands)	Watt	180	180	180	180	180
Mechanical parameters						
Weight	g/m	71	138	73	120	150
Crush resistance	kN/m	12	80	12	120	100
Tensile load	N	125	400	125	800	600
Min. bending radius static	mm	30	45	30	50	55
Min. bending radius dynamic	mm	40	55	45	65	80
Application		Limited dynamic	Limited dynamic	Limited dynamic	Limiteddy-namic	Limited dynamic
Outer diameter	mm	5.95	8.9	6.1	8.8	10.0
Enviromental						
Temperature range	C°	–55to+200	–55to+200	–55to+200	–55to+200	–55to+85
Consruction						
Inner conductor		solid	solid	solid	solid	solid
Dielectric		Expanded PTFE	Expanded PTFE tape	Expanded PTFE tape	Expand-edPTFE	Expanded PTFE tape
Inner braid		Silver Plated	Silver Plated Copper	Silver Plated Copper	Silver Plated	Silver Plated Copper
Interlayer		Metalized Tape	Metalized Tape	Metalized Tape	Metalized Tape	Metalized Tape
Outer conductor		Silver Plated Copper Braid	Silver Plated Copper Braid	Silver Plated Copper Braid	Silver Plated Copper Braid	Silver Plated Copper Braid
Jacket		FEP	FEP	FEP	FEP	FEP
Cable armor		no	Monocoil Nomex Silicon	Nomex Braid FR	Stainless steel squarelock	EPDM
Applications						
		Internal system	Laboratory use high- flex	Fuselage installation and flame retardant	High crush resistance and ground based use	High pressure, Water immersion

LLEF 235 | MW cable up to 18GHz





All connectors are made according to the following materials and MIL standards:	
Body of connector	Stainless steel. Corrosion-resistant, non Magnetic 303, Per ASTM A484 and A582.
Center conductor	Beryllium Copper per ASTM-B-196, QQ-C-530.
Insulator	PTFE per ASTM-D-1 710
Finish	Center Conductors and solder components Are plated per MIL-G- 45204 Type II, Class 1 Over nickel plate per QQ-N-290. Body and Body components shall be Passivated per ASTM A380.
Interface	All Connectors Interface per MIL-STD 348 and MIL-PRF- 39012 accordingly.
Environmental	All Connectors meet MIL-STD-202- per the Following tests:
Temp. Range	-54 to +155 deg C.
Thermal shock	MIL –STD 202 Meth.107 Cond B
Vibration	MIL –STD 202 Meth. 204 Cond B.
Shock	MIL–STD 202 Meth. 213 Cond I.
Waterproofing	IP67 and on selected types IP68
Material option	SS-316 per request.

Advantages of the Neoflex MW cable family

Wide temperature range

-55 to +200 °C for most cable types

-55 to +200 °C for most connector types

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Chemical stability

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0.2 dB/m @ 18 GHz for Neoflex LL335i

Lowest Phase over temperature

650 ppm over -55 to +75 deg. C

High power performance

Neoflex LLEF335i withstanding

400 Watt CW @ 18 GHz

Low weight, small diameter

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Likewise smaller diameter cables are achieved for same electrical performance vs. thicker cables using other technologies

Wide frequency range

Neoflex Family from DC up to 40 GHz.

Connector selection guide for cable LLEF235 family

SMA all range (UP TO 18 GHz).

TNC all range (UP TO 18 GHz).

N TYPE all range (UP TO 18 GHz).

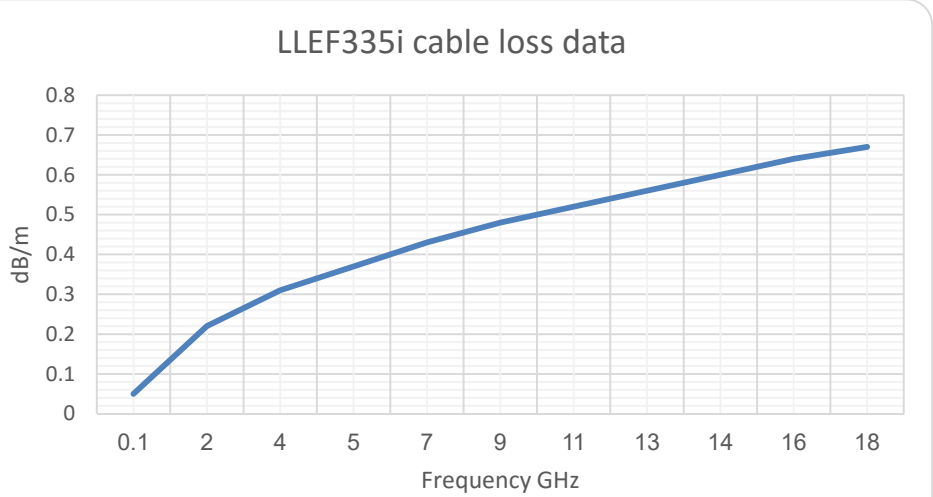
LLEF 335i

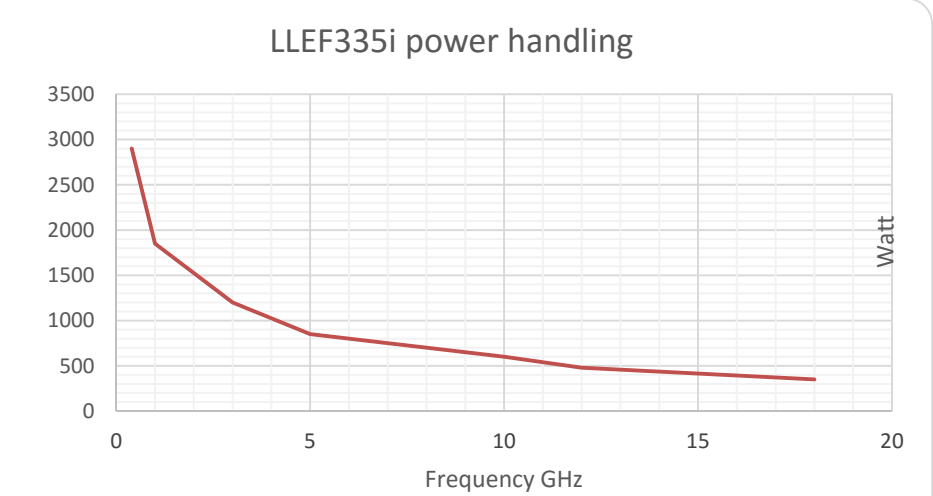
MW cable up to 18GHz

Assembly types

		LLEF335i	LLEF335iF	LLEF335iN	LLEF335iS	LLEF335iZ
Electrical specifications						
Cut off frequency	GHz	18	18	18	18	18
VP	%	83	83	83	83	83
Screening effectiveness (up to 18 GHz)	dB	> 95	> 100	>95	>100	>100
Phase stability vs. flexure (360°, diameter 40 mm)	deg/GHz	<0.7	< 0.7	< 0.7	< 0.7	< 0.7
Phase stability vs. temperature (–40 to +85 °C)	ppm	< 650	< 650	< 650	< 650	< 650
Assembly phase matching tolerances	deg/GHz	± 0.5	± 0.5	± 0.5	± 0.5	± 0.5
Cable attenuation at 25 °C @ 18GHz (see graph for all bands)	dB/m	0.7	0.7	0.7	0.7	0.7
Insertion loss stability vs. bending	dB	± 0.2	± 0.2	± 0.2	± 0.2	± 0.2
Insertion loss stability vs. temperature	%/°C	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Power handling @ 18GHz (see graph for all bands)	Watt	400	400	400	400	400
Mechanical parameters						
Weight	g/m	112	300	115	300	300
Crush resistance	kN/m	12	80	12	120	100
Tensile load	N	125	400	125	800	600
Min. bending radius static	mm	38	50	40	60	80
Min. bending radius dynamic	mm	65	75	65	80	100
Application		Limited dynamic	Limited dynamic	Limited dynamic	Limited dynamic	Limited dynamic
Outer diameter	mm	7.60	11.6	8.0	12.0	13.0
Environmental						
Temperature range	°C	–55 to +200	–55 to +200	–55 to +200	–55 to +200	–55 to +85
Construction						
Inner conductor		solid	solid	solid	solid	solid
Dielectric		Expanded PTFE tape	Expanded PTFE tape	Expanded PTFE tape	Expanded PTFE tape	Expanded PTFE tape
Outer conductor		tape/ polyimide/ braid	tape/ polyimide/ braid	tape/ polyimide/ braid	tape/ polyimide/ braid	tape/ polyimide/ braid
Jacket		FEP	FEP	FEP	FEP	FEP
Cable armor		no	Monocoil / Nomex/ Silicon	Nomex Braid FR	Stainless steel squarelock	EPDM

LLEF 335i | MW cable up to 18GHz





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Likewise smaller diameter cables are achieved for same electrical performance vs. thicker cables using other technologies

Wide frequency range

Neoflex Family from DC up to 40 GHz.

Connector selection guide for cable LLEF335i family

SMA all range (UP TO 18 GHz).

TNC all range (UP TO 18 GHz).

N TYPE all range (UP TO 18 GHz).

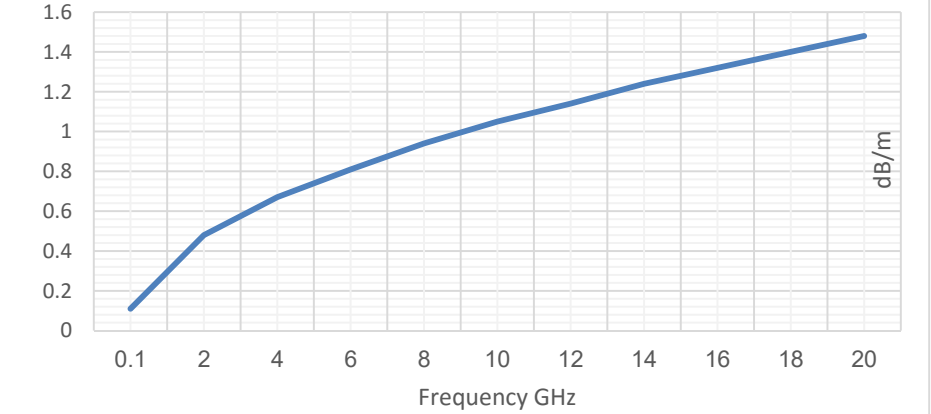
LLEF 162 STR

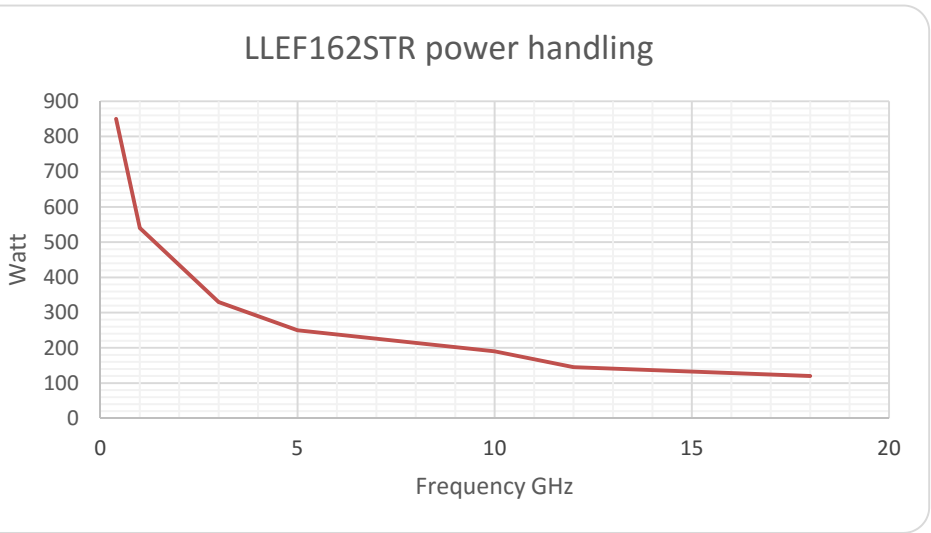
MW cable up to 18GHz

Assembly types

		LLEF162STR	LLEF162STRF	LLEF162STRN	LLEF162STRS	LLEF162STRZ
Electrical specifcations						
Cut off frequency	GHz	18	18	18	18	18
VP	%	83	83	83	83	83
Screening effectiveness (up to 18 GHz)	dB	> 95	> 100	>95	>100	>100
Phase stability vs. flexure (360°, diameter 40 mm)	deg/GHz	<0.7	< 0.7	< 0.7	< 0.7	< 0.7
Phasestabilityvs.temperature(–40 to+85°C)	ppm	<650	<650	< 650	< 650	< 650
Assembly phase matching tolerances	deg/GHz	± 0.25	± 0.25	± 0.25	± 0.25	± 0.25
Cable attenuation at 25 °C @ 18GHz(see graph for all bands)	dB/m	1.5	1.5	1.5	1.5	1.5
Insertion loss stability vs. bending	dB	± 0.2	± 0.2	± 0.2	± 0.2	± 0.2
Insertion loss stability vs. temperature	%/°C	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Power handling @ 18GHz (see graph for all bands)	Watt	120	120	120	120	120
Mechanical parameters						
Weight	g/m	31	96	68	118	100
Crush resistance	kN/m	12	80	12	120	100
Tensile load	N	125	400	125	800	600
Min. bending radius static	mm	20	28	20	40	40
Min. bending radius dynamic	mm	30	40	30	60	60
Application		dynamic	dynamic	dynamic	dynamic	dynamic
Outer diameter	mm	4.10	6,5	4.1	6.9	7.0
Enviromental						
Temperature range	°C	–55 to +200	–55 to +200	–55 to +200	–55 to +200	–55 to +85
Consruction						
Inner conductor		stranded	stranded	stranded	stranded	stranded
Dielectric		Expanded PTFE	Expanded PTFE tape	Expanded PTFE tape	Expanded PTFE	Expanded PTFE tape
Inner braid		Silver Plated	Silver Plated Copper	Silver Plated Copper	Silver Plated	Silver Plated Copper
Interlayer		Metalized Tape	Metalized Tape	Metalized Tape	Metalized Tape	Metalized Tape
Outer conductor		Silver Plated Copper Braid	Silver Plated Copper Braid	Silver Plated Copper Braid	Silver Plated Copper Braid	Silver Plated Copper Braid
Jacket		FEP	FEP	FEP	FEP	FEP
Cable armor		no	Monocoil Nomex Silicon	Nomex Braid FR	Stainless steel squarelock	EPDM
Applications						
		Internal system	Laboratory use high- flex	Fuselage installation and flame retardant	High crush resistance and ground based use	High pressure, Water immersion

LLEF 162 STR | MW cable up to 18GHz





All connectors are made according to the following materials and MIL standards:	
Body of connector	Stainless steel. Corrosion-resistant, non Magnetic 303, Per ASTM A484 and A582.
Center conductor	Beryllium Copper per ASTM-B-196, QQ-C-530.
Insulator	PTFE per ASTM-D-1 710
Finish	Center Conductors and solder components Are plated per MIL-G- 45204 Type II, Class 1 Over nickel plate per QQ-N-290. Body and Body components shall be Passivated per ASTM A380.
Interface	All Connectors Interface per MIL-STD 348 and MIL-PRF- 39012 accordingly.
Environmental	All Connectors meet MIL-STD-202- per the Following tests:
Temp. Range	-54 to +155 deg C.
Thermal shock	MIL –STD 202 Meth.107 Cond B
Vibration	MIL –STD 202 Meth. 204 Cond B.
Shock	MIL–STD 202 Meth. 213 Cond I.
Waterproofing	IP67 and on selected types IP68
Material option	SS-316 per request.

Advantages of the Neoflex MW cable family

Wide temperature range

-55 to +200 °C for most cable types

-55 to +200 °C for most connector types

Mechanical protection

A wide range of armors are available for most Neoflex coble types.

Chemical stability

Thanks to excellent materials (FEP).

Lowest losses and excellent stability vs. Temperature

0.2 dB/m @ 18 GHz for Neoflex LL335i

Lowest Phase over temperature

650 ppm over -55 to +75 deg. C

High power performance

Neoflex LLEF335i withstanding

400 Watt CW @ 18 GHz

Low weight, small diameter

Neoflex family of cables use expanded PTFE tape which reduces the weight of any given cable by 20-35 % as compared to other technologies while still maintaining same electrical performance.

Likewise smaller diameter cables are achieved for same electrical performance vs. thicker cables using other technologies

Wide frequency range

Neoflex Family from DC up to 40 GHz.

Connector selection guide for cable LLEF162 family

2.92 straight plug (up to 18GHz).

SMA all range (UP TO 18 GHz).

TNC all range (UP TO 18 GHz).

N TYPE all range (UP TO 18 GHz).

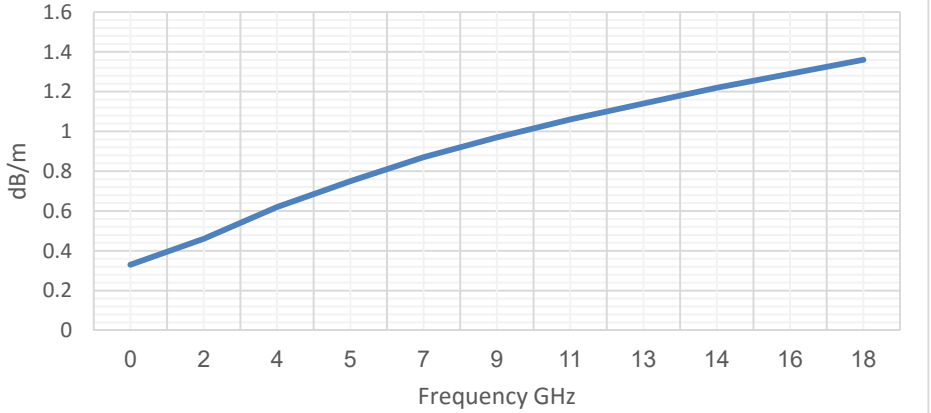
LLEF 142 STR

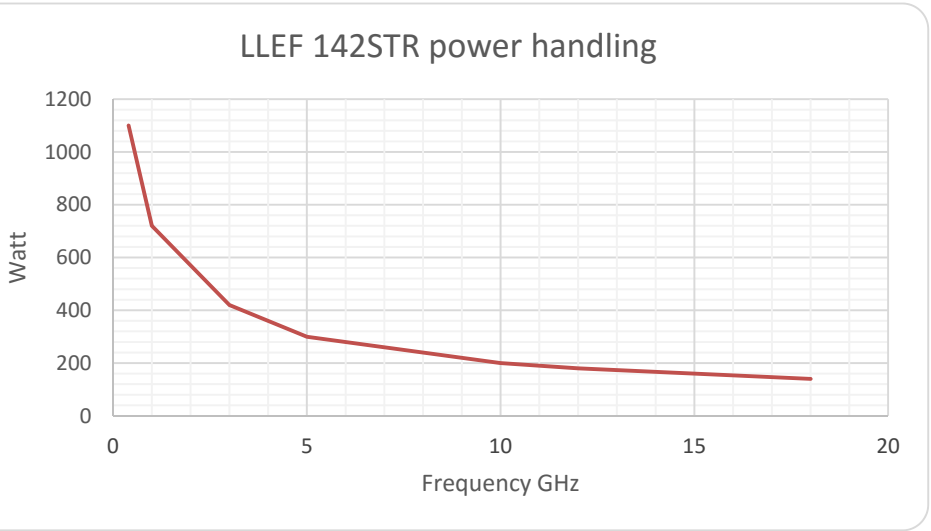
MW cable up to 18GHz

Assembly types

		LLEF142STR	LLEF142STRF	LLEF142STRN	LLEF142STRS	LLEF142STRZ
Electrical specifcations						
Cut off frequency	GHz	27	27	27	27	27
VP	%	83	83	83	83	83
Screening effectiveness (up to 18 GHz)	dB	> 95	> 100	>95	>100	>100
Phase stability vs. flexure (360°, diameter 40 mm)	deg/GHz	<0.7	< 0.7	< 0.7	< 0.7	< 0.7
Phase stability vs. temperature (–40 to +85 °C)	ppm	< 650	< 650	< 650	< 650	< 650
Assembly phase matching tolerances	deg/GHz	± 0.5	± 0.5	± 0.5	± 0.5	± 0.5
Cable attenuation at 25 °C @ 18GHz (see graph for all bands)	dB/m	1.1	1.1	1.1	1.1	1.1
Insertion loss stability vs. bending	dB	± 0.2	± 0.2	± 0.2	± 0.2	± 0.2
Insertion loss stability vs. temperature	%/°C	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Power handling @ 18GHz (see graph for all bands)	Watt	140	140	140	140	140
Mechanical parameters						
Weight	g/m	65	92	68	118	100
Crush resistance	kN/m	12	80	12	120	100
Tensile load	N	125	400	125	800	600
Min. bending radius static	mm	20	28	20	40	40
Min. bending radius dynamic	mm	30	40	30	60	60
Application		Limited dynamic	Limited dynamic	Limited dynamic	Limited dynamic	Limited dynamic
Outer diameter	mm	4.95	7.9	5.0	7.0	8.0
Environmental						
Temperature range	°C	–55 to +200	–55 to +200	–55 to +200	–55 to +200	–55 to +85
Construction						
Inner conductor		solid	solid	solid	solid	solid
Dielectric		Expanded PTFE	Expanded PTFE tape	Expanded PTFE tape	Expanded PTFE	Expanded PTFE tape
Inner braid		Silver Plated	Silver Plated Copper	Silver Plated Copper	Silver Plated	Silver Plated Copper
Interlayer		Metalized Tape	Metalized Tape	Metalized Tape	Metalized Tape	Metalized Tape
Outer conductor		Silver Plated Copper Braid	Silver Plated Copper Braid	Silver Plated Copper Braid	Silver Plated Copper Braid	Silver Plated Copper Braid
Jacket		FEP	FEP	FEP	FEP	FEP
Cable armor		no	Monocoil / Nomex/ Silicon	Nomex Braid	Stainless steel squarelock	EPDM
Applications						
		Internal system	Laboratory use high- flex	Fuselage installation and flame retardant	High load and ground based use	High pressure, Water immersion

LLEF 142 STR | MW cable up to 18GHz





All connectors are made according to the following materials and MIL standards:	
Body of connector	Stainless steel. Corrosion-resistant, non Magnetic 303, Per ASTM A484 and A582.
Center conductor	Beryllium Copper per ASTM-B-196, QQ-C-530.
Insulator	PTFE per ASTM-D-1 710
Finish	Center Conductors and solder components Are plated per MIL-G- 45204 Type II, Class 1 Over nickel plate per QQ-N-290. Body and Body components shall be Passivated per ASTM A380.
Interface	All Connectors Interface per MIL-STD 348 and MIL-PRF- 39012 accordingly.
Environmental	All Connectors meet MIL-STD-202- per the Following tests:
Temp. Range	-54 to +155 deg C.
Thermal shock	MIL –STD 202 Meth.107 Cond B
Vibration	MIL –STD 202 Meth. 204 Cond B.
Shock	MIL–STD 202 Meth. 213 Cond I.
Waterproofing	IP67 and on selected types IP68
Material option	SS-316 per request.

Advantages of the Neoflex MW cable family

Wide temperature range

-55 to +200 °C for most cable types

-55 to +200 °C for most connector types

Mechanical protection

A wide range of armors are available for most Neoflex coble types.

Chemical stability

Thanks to excellent materials (FEP).

Lowest losses and excellent stability vs. Temperature

0.2 dB/m @ 18 GHz for Neoflex LL335i

Lowest Phase over temperature

650 ppm over -55 to +75 deg. C

High power performance

Neoflex LLEF335i withstanding

400 Watt CW @ 18 GHz

Low weight, small diameter

Neoflex family of cables use expanded PTFE tape which reduces the weight of any given cable by 20-35 % as compared to other technologies while still maintaining same electrical performance.

Likewise smaller diameter cables are achieved for same electrical performance vs. thicker cables using other technologies

Wide frequency range

Neoflex Family from DC up to 40 GHz.

Connector selection guide for cable LLEF142 STR family

2.92 straight plug (up to 18GHz).

SMA all range (UP TO 18 GHz).

TNC all range (UP TO 18 GHz).

N TYPE all range (UP TO 18 GHz).

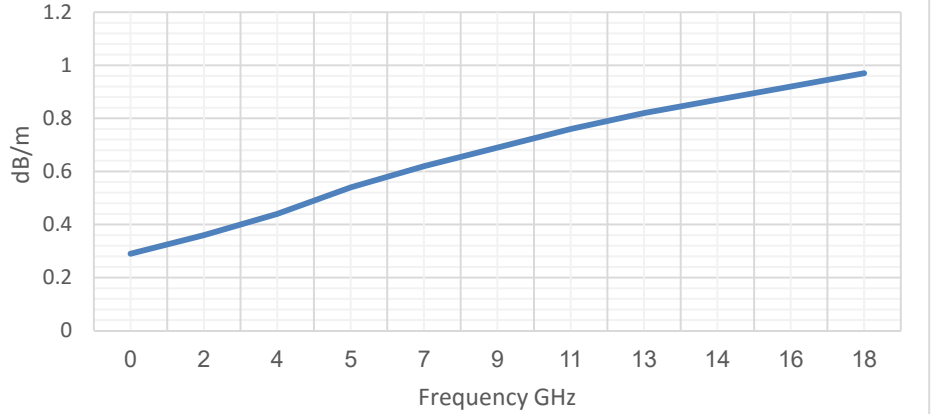
LLEF 270 STR

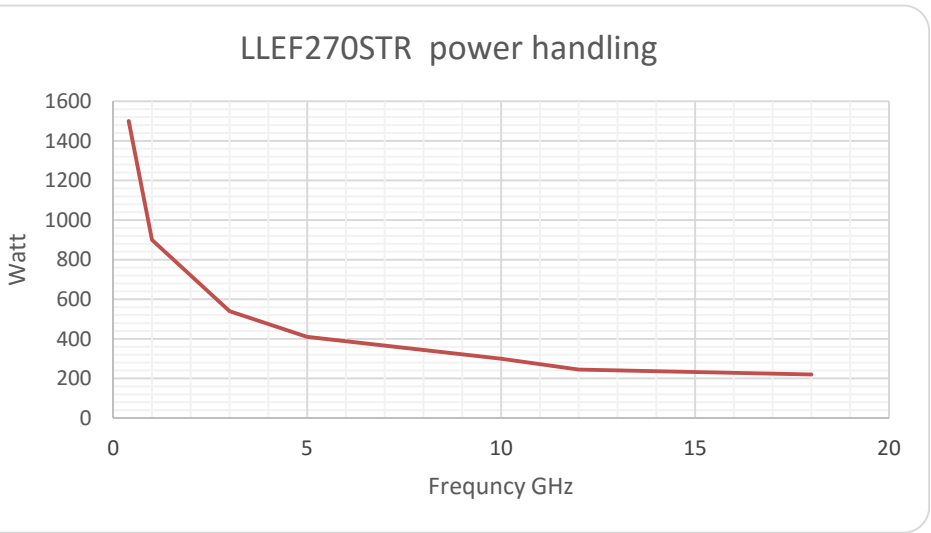
MW cable up to 18GHz

Assembly types

		LLEF270STR	LLEF270STR F	LLEF270STR N	LLEF270STR S	LLEF270STR Z
Electrical specifcations						
Cut off frequency	GHz	18	18	18	18	18
VP	%	83	83	83	83	83
Screening effectiveness (up to 18 GHz)	dB	> 95	> 100	>95	>100	>100
Phase stability vs. flexure (360°, diameter 40 mm)	deg/GHz	<0.7	< 0.7	< 0.7	< 0.7	< 0.7
Phase stability vs. temperature (–40to +85 °C)	ppm	< 650	< 650	<650	< 650	< 650
Assembly phase matching tolerances	deg/GHz	± 0.5	± 0.5	± 0.5	± 0.5	±0.5
Cable attenuation at 25 °C @ 18GHz (see graph for all bands)	dB/m	0.75	0.75	0.75	0.75	0.75
Insertion loss stability vs. bending	dB	± 0.2	± 0.2	± 0.2	± 0.2	± 0.2
Insertion loss stability vs. temperature	%/°C	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Power handling@ 18GHz (see graph for all bands)	Watt	220	220	220	220	220
Mechanical parameters						
Weight	g/m	105	295	110	295	330
Crush resistance	kN/m	12	80	12	120	100
Tensile load	N	125	400	125	800	600
Min. bending radius static	mm	25	50	40	60	80
Min. bending radius dynamic	mm	50	75	65	80	100
Application		dynamic	dynamic	dynamic	dynamic	semi dynamic
Outer diameter	mm	6.90	11.6	7.0	9.5	12.0
Enviromental						
Temperature range	°C	–55to+200	–55to+200	–55to+200	–55to+200	–55to+85
Consruction						
Inner conductor		stranded	stranded	stranded	stranded	stranded
Dielectric		Expanded PTFE	Expanded PTFE tape	Expanded PTFE tape	Expand-edPTFE	Expanded PTFE tape
Inner braid		Silver Plated	Silver Plated Copper	Silver Plated Copper	Silver Plated	Silver Plated Copper
Interlayer		Metalized Tape	Metalized Tape	Metalized Tape	Metalized Tape	Metalized Tape
Outer conductor		Silver Plated Copper Braid	Silver Plated Copper Braid	Silver Plated Copper Braid	Silver Plated Copper Braid	Silver Plated Copper Braid
Jacket		FEP	FEP	FEP	FEP	FEP
Cable armor		no	Monocoil / nomex/ Silicon	Nomex Braid	Stainless steel squarelock	EPDM
Applications						
		Internal system	Laboratory use high- flex	Fuselage installation and flame retardant	High crush resistance and ground based use	High pressure, Water immersion

LLEF 270 STR | MW cable up to 18GHz





All connectors are made according to the following materials and MIL standards:	
Body of connector	Stainless steel. Corrosion-resistant, non Magnetic 303, Per ASTM A484 and A582.
Center conductor	Beryllium Copper per ASTM-B-196, QQ-C-530.
Insulator	PTFE per ASTM-D-1 710
Finish	Center Conductors and solder components Are plated per MIL-G- 45204 Type II, Class 1 Over nickel plate per QQ-N-290. Body and Body components shall be Passivated per ASTM A380.
Interface	All Connectors Interface per MIL-STD 348 and MIL-PRF- 39012 accordingly.
Environmental	All Connectors meet MIL-STD-202- per the Following tests:
Temp. Range	-54 to +155 deg C.
Thermal shock	MIL –STD 202 Meth.107 Cond B
Vibration	MIL –STD 202 Meth. 204 Cond B.
Shock	MIL–STD 202 Meth. 213 Cond I.
Waterproofing	IP67 and on selected types IP68
Material option	SS-316 per request.

Advantages of the Neoflex MW cable family

Wide temperature range

-55 to +200 °C for most cable types

-55 to +200 °C for most connector types

Mechanical protection

A wide range of armors are available for most Neoflex coble types.

Chemical stability

Thanks to excellent materials (FEP).

Lowest losses and excellent stability vs. Temperature

0.2 dB/m @ 18 GHz for Neoflex LL335i

Lowest Phase over temperature

650 ppm over -55 to +75 deg. C

High power performance

Neoflex LLEF335i withstanding

400 Watt CW @ 18 GHz

Low weight, small diameter

Neoflex family of cables use expanded PTFE tape which reduces the weight of any given cable by 20-35 % as compared to other technologies while still maintaining same electrical performance.

Likewise smaller diameter cables are achieved for same electrical performance vs. thicker cables using other technologies

Wide frequency range

Neoflex Family from DC up to 40 GHz.

Connector selection guide for cable LLEF120 family

SMA all range (UP TO 18 GHz).

TNC all range (UP TO 18 GHz).

N TYPE all range (UP TO 18 GHz).

LLEF 450 STR

MW cable up to 12GHz

NO ARMOR

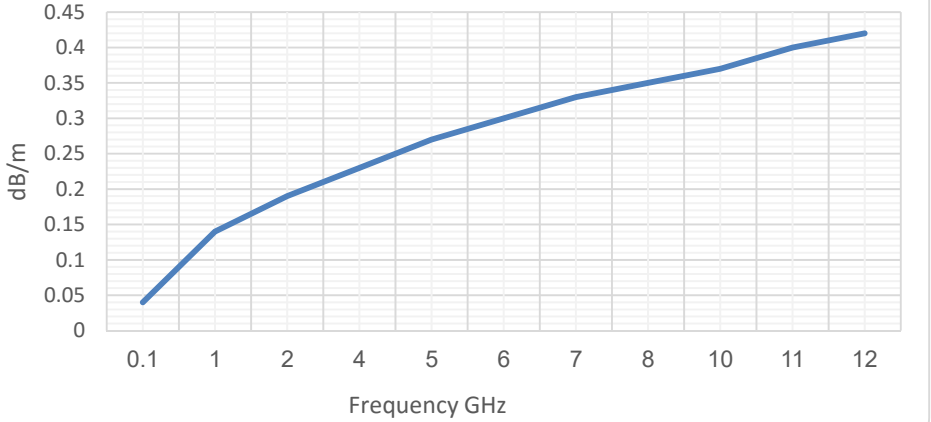
F

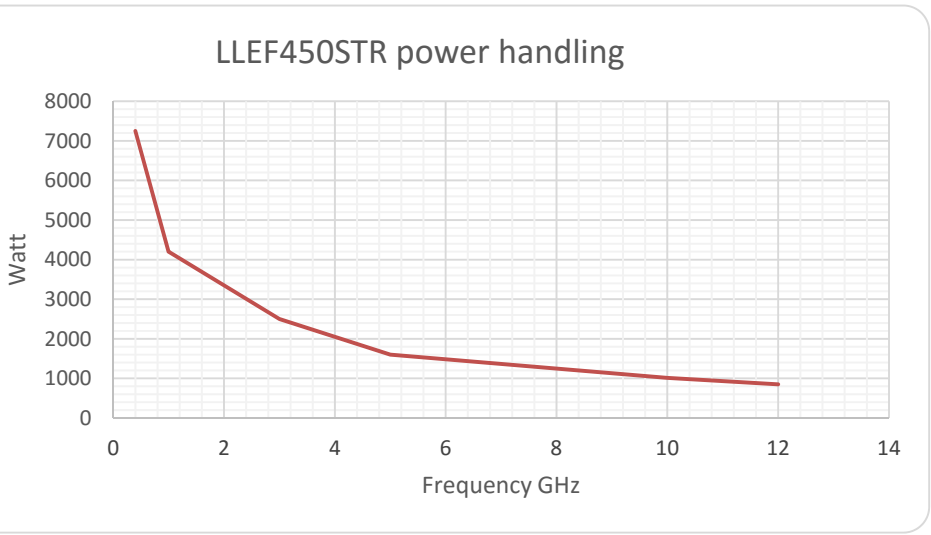
N

Assembly types

		LLEF450STR	LLEF450STRF	LLEF450STRN
Electrical specifications				
Cut off frequency	GHz	12	12	12
VP	%	83	83	83
Screening effectiveness (up to 10 GHz)	dB	> 95	> 100	>95
Phase stability vs. flexure (360°, diameter 40 mm)	deg/GHz	<0.7	< 0.7	< 0.7
Phase stability vs. temperature (–40 to +85 °C)	ppm	< 650	< 650	< 650
Assembly phase matching tolerances	deg/GHz	± 0.5	± 0.5	± 0.5
Cable attenuation at 25 °C @ 10GHz (see graph for all bands)	dB/m	0.42	0.42	0.42
Insertion loss stability vs. bending	dB	± 0.2	± 0.2	± 0.2
Insertion loss stability vs. temperature	%/°C	< 0.1	< 0.1	< 0.1
Power handling @ 10GHz (see graph for all bands)	Watt	1015	1015	1015
Mechanical parameters				
Weight	g/m	246	400	250
Crush resistance	kN/m	12	80	12
Tensile load	N	125	400	125
Min. bending radius static	mm	25	50	40
Min. bending radius dynamic	mm	50	75	65
Application		dynamic	dynamic	dynamic
Outer diameter	mm	11.40	15.0	12.0
Environmental				
Temperature range	°C	–55 to +200	–55 to +200	–55 to +200
Construction				
Inner conductor		stranded	stranded	stranded
Dielectric		Expanded PTFE tape	Expanded PTFE tape	Expanded PTFE tape
Outer conductor		tape/polyimide/braid	tape/polyimide/braid	tape/polyimide/braid
Jacket		FEP	FEP	FEP
Cable armor		no	Monocoil /Nomex/ Silicon	Nomex Braid FR

LLEF 450 STR | MW cable up to 12GHz





All connectors are made according to the following materials and MIL standards:	
Body of connector	Stainless steel. Corrosion-resistant, non Magnetic 303, Per ASTM A484 and A582.
Center conductor	Beryllium Copper per ASTM-B-196, QQ-C-530.
Insulator	PTFE per ASTM-D-1 710
Finish	Center Conductors and solder components Are plated per MIL-G- 45204 Type II, Class 1 Over nickel plate per QQ-N-290. Body and Body components shall be Passivated per ASTM A380.
Interface	All Connectors Interface per MIL-STD 348 and MIL-PRF- 39012 accordingly.
Environmental	All Connectors meet MIL-STD-202- per the Following tests:
Temp. Range	-54 to +155 deg C.
Thermal shock	MIL –STD 202 Meth.107 Cond B
Vibration	MIL –STD 202 Meth. 204 Cond B.
Shock	MIL–STD 202 Meth. 213 Cond I.
Waterproofing	IP67 and on selected types IP68
Material option	SS-316 per request.

Advantages of the Neoflex MW cable family

Wide temperature range

-55 to +200 °C for most cable types

-55 to +200 °C for most connector types

Mechanical protection

A wide range of armors are available for most Neoflex coble types.

Chemical stability

Thanks to excellent materials (FEP).

Lowest losses and excellent stability vs. Temperature

0.2 dB/m @ 18 GHz for Neoflex LL335i

Lowest Phase over temperature

650 ppm over -55 to +75 deg. C

High power performance

Neoflex LLEF335i withstanding

400 Watt CW @ 18 GHz

Low weight, small diameter

Neoflex family of cables use expanded PTFE tape which reduces the weight of any given cable by 20-35 % as compared to other technologies while still maintaining same electrical performance.

Likewise smaller diameter cables are achieved for same electrical performance vs. thicker cables using other technologies

Wide frequency range

Neoflex Family from DC up to 40 GHz.

Connector selection guide for cable LLEF450 STR family

TNC all range (UP TO 12 GHz).

N TYPE all range (UP TO 12 GHz).

LLEF 480 STR

MW cable up to 11GHz

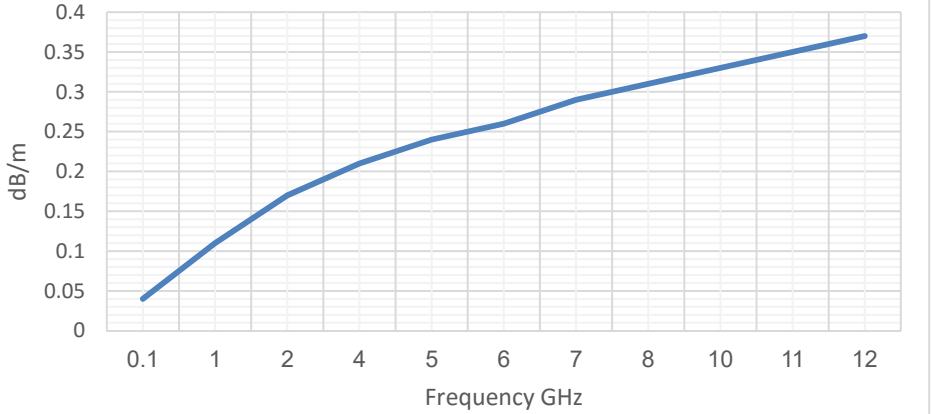
NO ARMOR

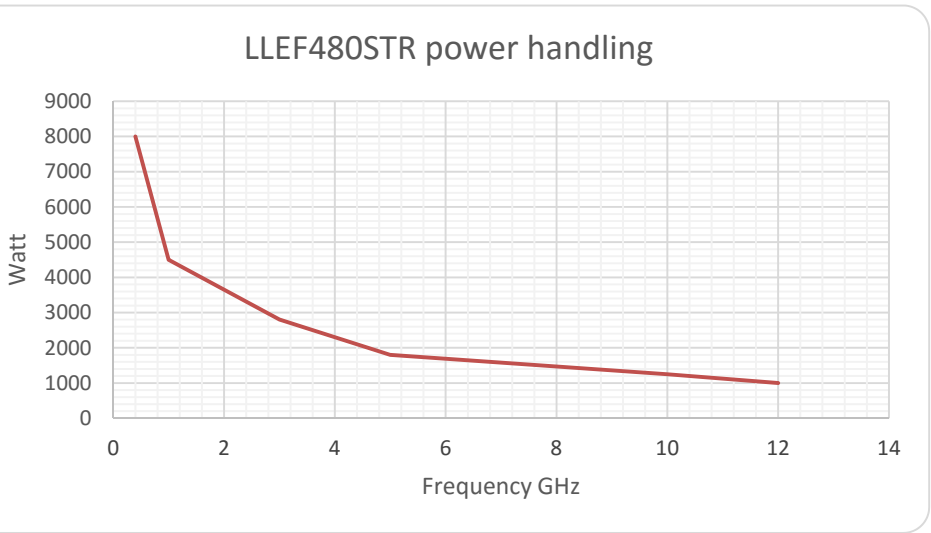
N

Assembly types

		LLEF480STR	LLEF480STRN
Electrical specifications			
Cut off frequency	GHz	11	11
VP	%	83	83
Screening effectiveness (up to 10 GHz)	dB	> 95	>95
Phase stability vs. flexure (360°, diameter 40 mm)	deg/GHz	<0.7	< 0.7
Phase stability vs. temperature (–40 to +85 °C)	ppm	< 650	< 650
Assembly phase matching tolerances	deg/GHz	± 0.5	± 0.5
Cable attenuation at 25 °C @ 10GHz (see graph for all bands)	dB/m	0.36	0.36
Insertion loss stability vs. bending	dB	± 0.2	± 0.2
Insertion loss stability vs. temperature	%/°C	< 0.1	< 0.1
Power handling @ 10GHz (see graph for all bands)	Watt	1250	1250
Mechanical parameters			
Weight	g/m	294	300
Crush resistance	kN/m	12	12
Tensile load	N	125	125
Min. bending radius static	mm	25	40
Min. bending radius dynamic	mm	50	65
Application		dynamic	dynamic
Outer diameter	mm	12.20	13.0
Environmental			
Temperature range	°C	–55 to +200	–55 to +200
Construction			
Inner conductor		stranded	stranded
Dielectric		Expanded PTFE tape	Expanded PTFE tape
Outer conductor		tape/polyimide/braid	tape/polyimide/braid
Jacket		FEP	FEP
Cable armor		no	Nomex Braid FR

LLEF 480 STR | MW cable up to 11GHz





All connectors are made according to the following materials and MIL standards:	
Body of connector	Stainless steel. Corrosion-resistant, non Magnetic 303, Per ASTM A484 and A582.
Center conductor	Beryllium Copper per ASTM-B-196, QQ-C-530.
Insulator	PTFE per ASTM-D-1 710
Finish	Center Conductors and solder components Are plated per MIL-G- 45204 Type II, Class 1 Over nickel plate per QQ-N-290. Body and Body components shall be Passivated per ASTM A380.
Interface	All Connectors Interface per MIL-STD 348 and MIL-PRF- 39012 accordingly.
Environmental	All Connectors meet MIL-STD-202- per the Following tests:
Temp. Range	-54 to +155 deg C.
Thermal shock	MIL –STD 202 Meth.107 Cond B
Vibration	MIL –STD 202 Meth. 204 Cond B.
Shock	MIL–STD 202 Meth. 213 Cond I.
Waterproofing	IP67 and on selected types IP68
Material option	SS-316 per request.

Advantages of the Neoflex MW cable family

Wide temperature range

-55 to +200 °C for most cable types

-55 to +200 °C for most connector types

Mechanical protection

A wide range of armors are available for most Neoflex coble types.

Chemical stability

Thanks to excellent materials (FEP).

Lowest losses and excellent stability vs. Temperature

0.2 dB/m @ 18 GHz for Neoflex LL335i

Lowest Phase over temperature

650 ppm over -55 to +75 deg. C

High power performance

Neoflex LLEF335i withstanding

400 Watt CW @ 18 GHz

Low weight, small diameter

Neoflex family of cables use expanded PTFE tape which reduces the weight of any given cable by 20-35 % as compared to other technologies while still maintaining same electrical performance.

Likewise smaller diameter cables are achieved for same electrical performance vs. thicker cables using other technologies

Wide frequency range

Neoflex Family from DC up to 40 GHz.

Connector selection guide for cable LLEF480 STR family

TNC all range (UP TO 11 GHz).

N TYPE all range (UP TO 11 GHz).

How To Order

XXXX - A- YY-C1 -YY-C2-100-CM

XXXX – Cable type*

(Table 1)

Cable TYPE	Code XXXXX*
LLEF120	120
LLEF160	160
LLEF142	142
LLEF235	235
LLEF335i	335
LLEF162STR	162S
LLEF142STR	142S
LLEF270STR	270S
LLEF450STR	450S
LLEF480STR	480S

*cable code from 3 to 5 digit

YY- Connector shape

(Table 3)

Description	Code YY
Straight Plug	SP
Right angle Plug	RP
Bulkhead Jack	BJ
Straight Jack	SJ

C - Connector family

(Table 4)

Family	Code C
SMA	S
TNC	T
N Type	N
BMA	B
SMP	P
K (2.9)	K
SC	SC
2.4	2.4
1.85	1.8

A - Armor type

(Table 2)

Description	Code A
Flex spring	F
Nomex shield	N
Neoprene	Z
Stainless tube	S
No Armor	-

Local Stock
Local Production
Short Delivery Time

Example:
For LLEF142S -Armor type N (Nomex) –SMA straight plug -Right angle N plug - 100CM
Ordering code is: 142S-N-SPS-RPN-100CM

*note: additional specifications (such as phase, labels, etc. should be specified separately).
All cables are shipped with I/L and R/L test data.
Individually packed in a sealed nylon bag inside a cardboard box.
(The box can contain up to 5 identical cables).

Company Profile

EIM FIRST is a leading provider of RF solutions to defense and industrial markets.
We provide RF cable solutions up to 100 GHz.
Semi-rigid cables, phase matched cable assemblies, flexible cables and fiber optic cables.

All cable assemblies are assembled and tested at the EIM assembly production facility.

Connectors according to MIL-STD-348 and they meet or exceed MIL-PRF-39012.
Cables are manufactured according to MIL-DTL-17, MIL-STD-87104, and MIL-C-81490.
Cables meet the following environmental conditions: MIL-STD-810D.

EIM FIRST production specializes in providing engineering solutions.
Our highly skilled teams are capable of supporting complex engineering RF military projects, from design to implementation and testing.

The whole group focuses on developing future technologies and supplying its customers with products and systems based on their unique and tailored made needs and requirements.

• EIM Group develops and manufactures a wide range of medical and communication devices, as well as products for the aviation and defense sectors in the area of military standard computers, RF and electronics for aerial, naval, and land based systems.

• The group excels in meeting the highest quality standards and is certified for the following standards: AS9100C, ISO13485, ISO 9001: 2008, ROHS and work standards IPC 610, IPC 620.

• EIM Group aspires to strengthen and position itself in both the industrial and defense markets. The group's goal is to continue being an international leader that offers high quality products and excellent customer service.

Neoflex ™

PROGRAM QUALIFICATIONS

- Aegis
- AH-64 Apache
- BAMS UAV
- Predator
- B-1, 2, 52
- F-15, 16, 18, 22, 35
- AWACS
- C-130
- Hellfire Missiles
- Cruise Missiles
- Patriot
- H-60 Black Hawk
- MRAP Vehicles
- KC-135
- Stealth Technologies
- Stryker
- Humvee
- Phased Antenna Systems
- CREW
- Bradley


Naval applications


Ground based radar

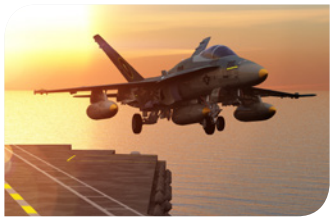

Missiles


Aircraft fuselage


Mobile sensors


Submarine


Helicopters


Fighter Aircraft


Mobile Radar

LEF-G0216-02-001

Visit Our New Web Site: www.eimfirst.co.il

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מכון התקנים הישראלי

EIMfirst Fiber RF Systems

18, Hasivim St., P.O.B 7551, Kiryat Matalon, Petach-Tikva 49517, Israel
Tel: 972-54-5611203 Fax: 972-3-9215010 For further information, please contact: rachel@eimsys.co.il