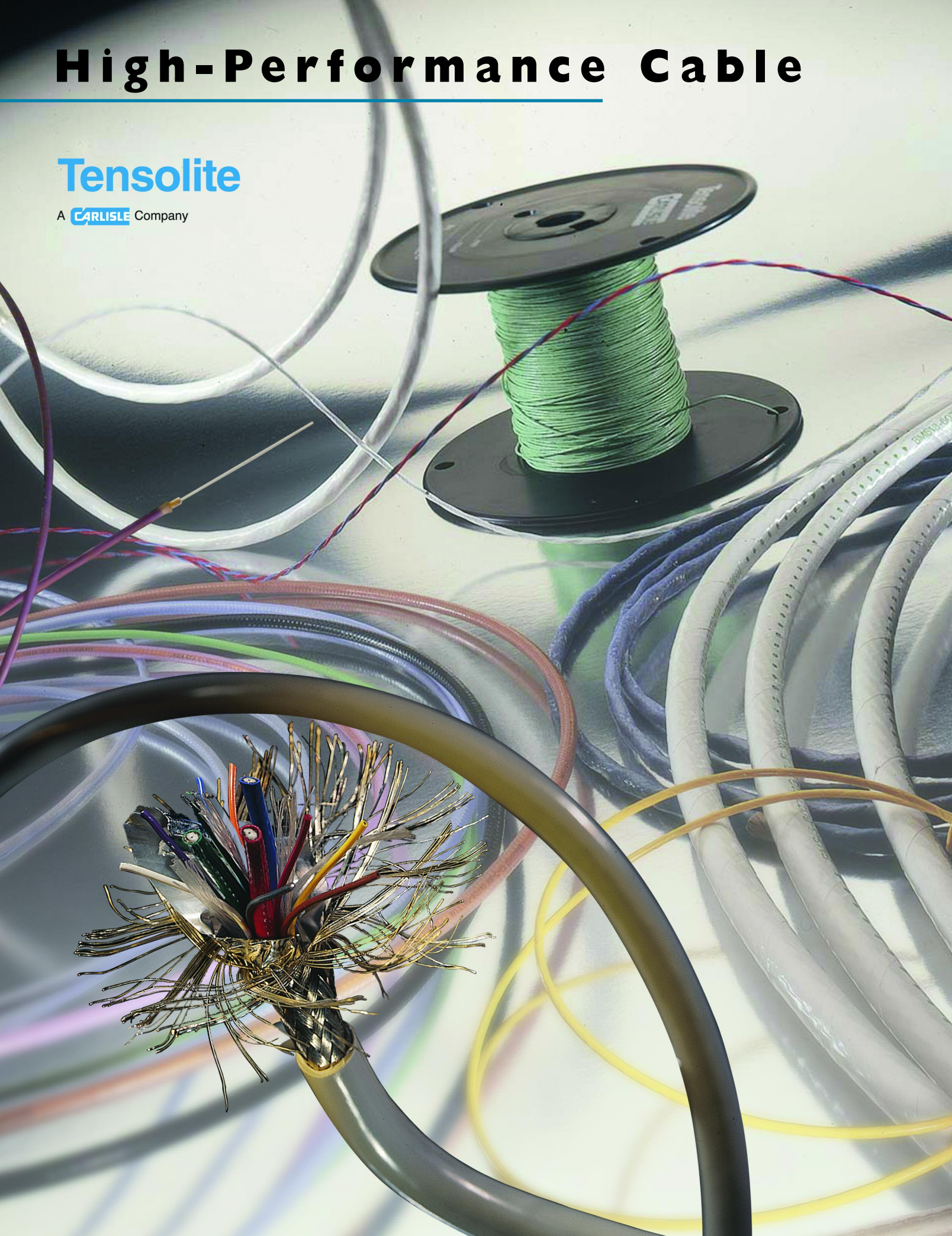
High-Performance Cable

Tensolite

A CARLISLE Company



Tensolite, A Carlisle Company

For over fifty years Tensolite has been providing leading-edge designs in wire and cable. This product guide is intended to provide a well focused presentation of our product line in regards to your market and products. Although it is by no means complete in regards to Tensolite's capabilities, it should provide a thorough starting point to aid you in your design considerations. The following Table of Contents should provide you with a good idea of how to utilize this guide to it's fullest potential; your end result being a wire or cable that you have specified to your own requirements and needs.

Thank you in advance for considering Tensolite for your cabling requirements and needs. Please feel free to contact your local Tensolite representative or call our corporate office at the number listed below.

Tensolite Company

A Carlisle Company

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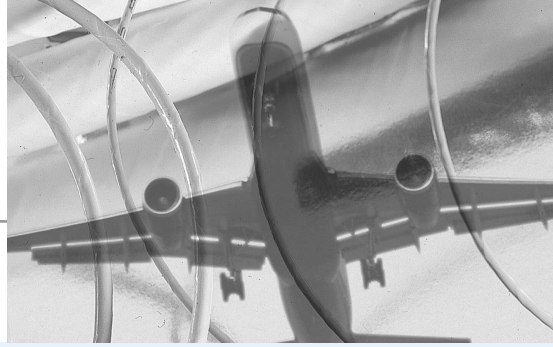
General Purpose Airframe Wire



Tufflite® 2000

In the early 1990s, Tensolite developed composite insulated Tufflite® 2000 to address the critical weaknesses of existing airframe wire designs. Other constructions such as poly-imide and XL-ETFE failed to provide a good balance of properties in areas such as arc-resistance, weight, size, temperature performance, smoke generation, and flammability. Tufflite® 2000 addresses the need for a small, lightweight, arc resistant, 260˚C rated general purpose wire.

For over a decade, Tufflite® 2000 has been tested and flown on thousands of commercial and military aircraft. Its superior smoke, flame and toxicity performance enables it to be used safely in both pressurized and non-pressurized zones of the aircraft. Tufflite® 2000's wide temperature range and overall balance of properties make it an ideal replacement for all other general-purpose wire types, both military and commercial (see page 20 for a partial list). Tufflite® 2000 is available in sizes from 26 to 4/0 AWG and is both hot stamp and laser markable.

Tufflite® 2000 Features and Benefits

SLT - Thin Wall, Light Weight

A thin wall, light weight version of ST which can be used in various constructions. It also has value when considered as a single conductor offering a 5% weight savings over the ST construction while maintaining the same mechanical properties. SLT is available in 150°C, 200°C and 260°C.

TLR - Metric Light Weight Multi-purpose

Encompasses a metric family of wire and cable with a temperature rating of 260°C. TLR is a multi-purpose normal weight wire which exhibits exceptional performance characteristics within the range of the critical parameters in airframe applications.
200°C and 260°C.

ST - Normal Weight, Multi-purpose

Encompasses a family of wire and cable in three temperature ratings: 150°C, 200°C, 260°C. ST is a multi-purpose normal weight wire which exhibits exceptional performance characteristics within the range of the critical parameters in airframe applications. This construction offers enhanced Hydrolysis Resistance and Cut-Through.

TLS - Thick Wall, Abrasion Resistant

An increased wall version which can be utilized in applications requiring superior mechanical capabilities such as abrasion resistance and dynamic cut-through. This insulation system may be used as a reduced size and weight replacement for MIL-W-22759/5 to /8.
TLS is rated at 260°C.

TLA - Aluminum Conductor

An increased wall thickness version utilizing an aluminum conductor for power feeder applications. Improved mechanical performance including superior flexibility as compared to traditional polyimide insulated power feeder cables. TLA is rated at 175°C.

Tufflite® 2000 Selection Guide

Use this table to select the wire that best fits your requirements.

	SLT	TLR	ST	TLS	TLA
Relative Insulation Thickness	Thin	Thin	Medium	Thick	Thick
Voltage Rating	600	600	600	600	600
Temperature Rating	150°C 200°C 260°C	260°C	150°C 200°C 260°C	260°C	175°C
Conductor Material	Copper Copper alloy	Copper Copper alloy	Copper Copper alloy	Copper Copper alloy	Aluminum
Conductor Coating	Tin Silver Nickel	Nickel	Tin Silver Nickel	Nickel	–
AWG Range	26-10	26-2	26-4/0	24-4/0	8-4/0

Features and Benefits

Safest Wire in the Air®

Excellent Temperature Performance

- Available in 150°C, 175°C, 200°C and 260°C
- Superior thermal life characteristics
- The safety of high temperature resistant insulation in overload conditions independent of conductor

Superior Flammability and Smoke Generation Properties

- Practically zero smoke generation and excellent resistance to flammability

Excellent Resistance to Arc Propagation

- Superior resistance to wet and dry arc propagation

Light Weight and Small Diameter

- SLT has an approximate 5% weight savings over medium wall ST construction

Best Balance of Properties

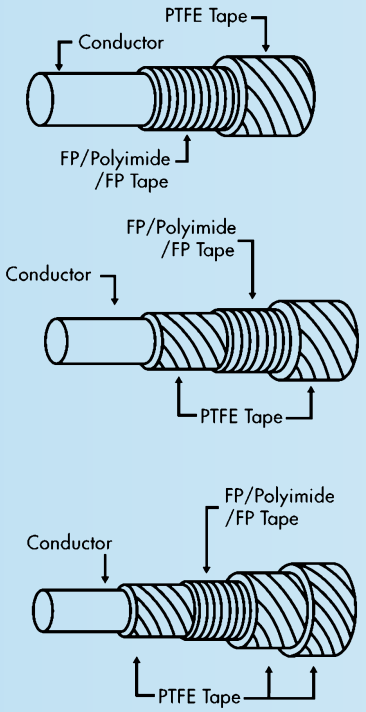
- Excellent flexibility and flex life
- Highly resistant to hydrolysis
- Superior abrasion resistance and cut-through performance

Tufflite® Part Numbering Guide

Family of Wire	Temperature Rating (°C)	No. of Conductors (not used for single insulated wire)	Shield & Jacket (not used for single insulated wire)	AWG Size	Conductor Material
ST –	200 –	2	SJ –	22	S
SLT Thin Wall	150° 200° 260°		T = TCC Shield S = SCC Shield N = NCC Shield F denotes flat shield	26 to 10	T = Tin Coated Copper S = Silver Coated Copper SA = Silver Coated Copper Alloy N = Nickel Coated Copper NA = Nickel Coated Copper Alloy
TLR	260°		N = NCC Shield*	26 to 2	N = Nickel Coated Copper NA = Nickel Coated Copper Alloy
ST Enhanced Medium Wall	150° 200° 260°		T = TCC Shield S = SCC Shield N = NCC Shield F denotes flat shield	26 to 4/0	T = Tin Coated Copper S = Silver Coated Copper SA = Silver Coated Copper Alloy N = Nickel Coated Copper NA = Nickel Coated Copper Alloy
TLS Thick Wall	260°		N = NCC Shield F denotes flat shield	24 to 4/0	N = Nickel Coated Copper NA = Nickel Coated Copper Alloy
TLA Thick Wall	175°			8 to 4/0	A = EC Aluminum

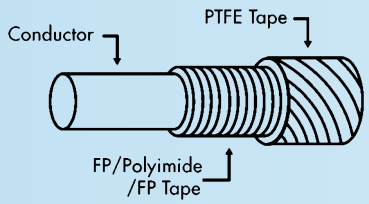
*1-4 conductor spiral shield
5-7 conductor braid shield

ST Single Conductor • Medium Wall



AWG	AS22759 /86 SCC 200°C	/87 NCC 260°C	/88 TCC 150°C	/89 SCCA 200°C	/90 NCCA 260°C	Diameter (inches Min	Diameter (inches Max	Weight (lbs/1000ft) Max	Diameter (MM) Min	Diameter (MM) Max	Weight (kg/km) Max
26	•	•		•	•	0.033	0.037	1.55	0.84	0.94	2.31
24	•	•		•	•	0.038	0.042	2.20	0.97	1.07	3.27
22	•	•	•	•	•	0.043	0.047	3.00	1.09	1.19	4.46
20	•	•	•	•	•	0.051	0.055	4.55	1.30	1.40	6.77
18	•	•	•			0.061	0.065	6.70	1.55	1.65	9.97
16	•	•	•			0.068	0.073	8.60	1.73	1.85	12.80
14	•	•	•			0.081	0.086	12.95	2.06	2.18	19.27
12	•	•	•			0.100	0.105	20.10	2.54	2.67	29.91
10	•	•	•			0.122	0.127	31.40	3.10	3.23	46.72
8	•	•	•			0.180	0.188	57.60	4.57	4.78	85.71
6	•	•	•			0.219	0.229	88.30	5.56	5.82	131.4
4	•	•	•			0.276	0.288	143.00	7.01	7.32	212.8
2	•	•	•			0.344	0.364	223.00	8.74	9.25	331.8
1	•	•	•			0.388	0.408	289.00	9.86	10.36	430.0
1/0	•	•	•			0.420	0.450	345.00	10.67	11.43	513.4
2/0	•	•	•			0.475	0.505	432.00	12.07	12.83	642.8
3/0	•	•	•			0.530	0.560	542.00	13.46	14.22	806.5
4/0	•	•	•			0.590	0.630	681.00	14.99	16.00	1013

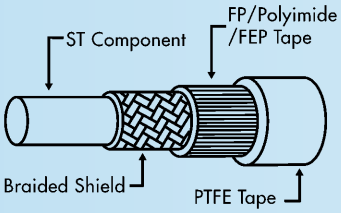
SLT Single Conductor • Thin Wall



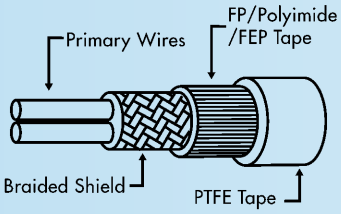
AWG	/80 TCC 150°C	/81 SCCA 200°C	/82 NCCA 260°C	/91 SCC 200°C	/92 NCC 260°C	Diameter (inches Min	Diameter (inches Max	Weight (lbs/1000ft) Max	Diameter (MM) Min	Diameter (MM) Max	Weight (kg/km) Max
26		•	•	•	•	0.030	0.034	1.43	0.76	0.86	2.13
24		•	•	•	•	0.034	0.038	1.93	0.86	.097	2.87
22	•	•	•	•	•	0.040	0.043	2.85	1.02	1.09	4.24
20	•	•	•	•	•	0.048	0.051	4.38	1.22	1.30	6.52
18	•	•	•			0.056	0.060	6.60	1.42	1.52	9.82
16	•	•	•			0.063	0.067	8.30	1.60	1.70	12.35
14	•	•	•			0.076	0.080	12.60	1.93	2.03	18.75
12	•	•	•			0.096	0.100	19.60	2.44	2.54	29.16
10	•	•	•			0.119	0.123	30.60	3.02	3.12	45.53

ST Round Shielded & Jacketed • Medium Wall

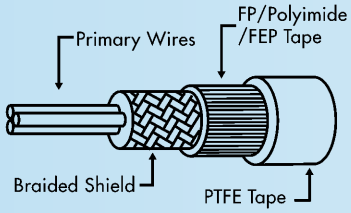
M27500 WJ, WK, WL, WM, WN



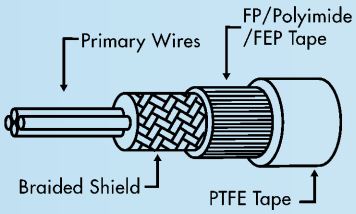
AWG	Diameter (inches)		Weight (lbs per 1000 ft.)	Diameter (MM)		Weight (kg/km)
	Min	Max	Max	Min	Max	Max
1 Conductor						
26	0.059	0.065	4.65	1.50	1.65	6.92
24	0.063	0.069	5.65	1.60	1.75	8.41
22	0.069	0.075	6.75	1.75	1.91	10.04
20	0.076	0.084	8.95	1.93	2.13	13.32
18	0.084	0.094	11.60	2.13	2.39	17.26
16	0.092	0.102	14.10	2.34	2.59	20.98
14	0.105	0.115	19.40	2.67	2.92	28.87
12	0.123	0.137	28.00	3.12	3.48	41.66
10	0.145	0.159	40.50	3.68	4.04	60.26



2 Conductor						
26	0.092	0.102	7.65	2.34	2.59	11.38
24	0.100	0.110	9.35	2.54	2.79	13.91
22	0.107	0.121	12.05	2.72	3.07	17.93
20	0.121	0.139	15.65	3.07	3.53	23.29
18	0.137	0.159	21.45	3.48	4.04	31.92
16	0.153	0.175	25.85	3.89	4.45	38.46
14	0.179	0.201	37.30	4.55	5.11	55.50
12	0.222	0.244	54.50	5.64	6.20	81.10
10	0.264	0.290	79.50	6.71	7.37	118.30



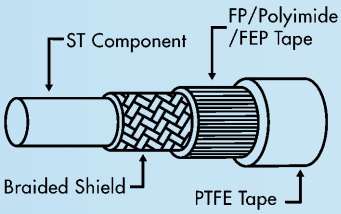
3 Conductor						
26	0.092	0.103	10.06	2.34	2.62	14.97
24	0.100	0.112	12.25	2.54	2.84	18.23
22	0.108	0.124	16.00	2.74	3.15	23.81
20	0.126	0.141	21.40	3.20	3.58	31.84
18	0.141	0.165	29.50	3.58	4.19	43.90
16	0.158	0.182	35.80	4.01	4.62	53.27
14	0.184	0.212	52.30	4.67	5.38	77.82
12	0.229	0.259	78.00	5.82	6.58	116.06
10	0.278	0.313	117.00	7.06	7.95	174.10

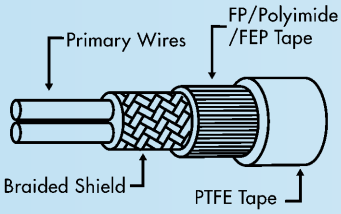


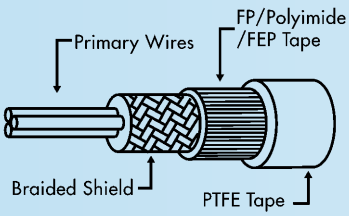
4 Conductor						
26	0.100	0.113	12.25	2.54	2.87	18.23
24	0.111	0.122	15.15	2.82	3.10	22.54
22	0.121	0.137	19.80	3.07	3.48	29.46
20	0.140	0.156	27.15	3.56	3.96	40.40
18	0.158	0.182	38.00	4.01	4.62	56.54
16	0.177	0.201	46.00	4.50	5.11	68.45
14	0.208	0.239	68.00	5.28	6.07	101.18
12	0.256	0.288	100.00	6.50	7.32	148.80
10	0.310	0.348	152.00	7.87	8.84	226.18

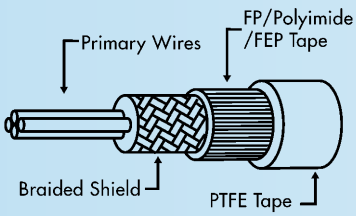
ST Flat Shielded & Jacketed • Medium Wall

M27500 WJ, WK, WL, WM, WN





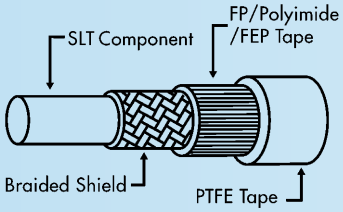




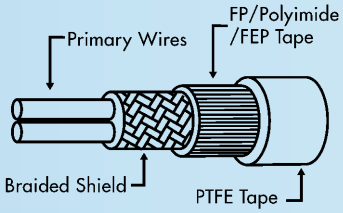
AWG	Diameter (inches)		Weight (lbs/1000ft)	Diameter (MM)		Weight (kg/km)
	Min	Max	Max	Min	Max	Max
1 Conductor						
26	0.048	0.054	3.35	1.22	1.37	4.98
24	0.052	0.058	3.99	1.32	1.47	5.94
22	0.058	0.064	5.05	1.47	1.63	7.51
20	0.065	0.073	6.95	1.65	1.85	10.34
18	0.073	0.083	9.55	1.85	2.11	14.21
16	0.081	0.091	11.70	2.06	2.31	17.41
14	0.093	0.105	16.60	2.36	2.67	24.70
12	0.112	0.126	24.60	2.84	3.20	36.60
10	0.134	0.148	36.23	3.40	3.76	53.91
2 Conductor						
26	0.081	0.091	5.85	2.06	2.31	8.70
24	0.082	0.092	7.16	2.08	2.34	10.65
22	0.092	0.106	9.35	2.34	2.69	13.91
20	0.106	0.124	13.15	2.69	3.15	19.57
18	0.126	0.148	18.40	3.20	3.76	27.38
16	0.142	0.164	22.60	3.61	4.17	33.63
14	0.168	0.190	32.60	4.27	4.83	48.51
12	0.208	0.230	48.50	5.28	5.84	72.17
10	0.250	0.276	73.00	6.35	7.01	108.62
3 Conductor						
26	0.081	0.092	7.70	2.06	2.34	11.46
24	0.089	0.101	9.65	2.26	2.57	14.36
22	0.097	0.113	12.90	2.46	2.87	19.20
20	0.115	0.130	18.25	2.92	3.30	27.16
18	0.130	0.154	26.10	3.30	3.91	38.84
16	0.147	0.171	32.10	3.73	4.34	47.76
14	0.173	0.201	46.60	4.39	5.11	69.34
12	0.218	0.248	71.10	5.54	6.30	105.80
10	0.263	0.298	107.00	6.68	7.57	159.22
4 Conductor						
26	0.089	0.102	9.65	2.26	2.59	14.36
24	0.100	0.111	12.30	2.54	2.82	18.30
22	0.110	0.126	16.60	2.79	3.20	24.70
20	0.129	0.145	23.80	3.28	3.68	35.41
18	0.147	0.171	33.70	3.73	4.34	50.15
16	0.166	0.190	41.60	4.22	4.83	61.90
14	0.200	0.225	61.80	5.08	5.72	91.96
12	0.245	0.277	93.50	6.22	7.04	139.13
10	0.295	0.333	140.00	7.49	8.46	208.32

SLT Round Shielded & Jacketed • Thin Wall

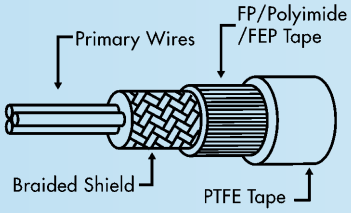
M27500 WB, WC, WE, WP, WR



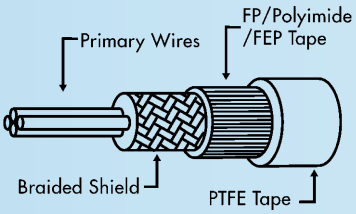
AWG	Diameter (inches)		Weight (lbs/1000ft)	Diameter (MM)		Weight (kg/km)
	Min	Max	Max	Min	Max	Max
1 Conductor						
26	0.055	0.062	4.45	1.40	1.57	6.62
24	0.060	0.066	5.45	1.52	1.68	8.11
22	0.065	0.072	6.50	1.65	1.83	9.67
20	0.072	0.081	8.45	1.83	2.06	12.57
18	0.080	0.090	11.30	2.03	2.29	16.81
16	0.087	0.097	13.40	2.21	2.46	19.94
14	0.100	0.110	18.60	2.54	2.79	27.68
12	0.118	0.132	27.00	3.00	3.35	40.18
10	0.141	0.155	39.50	3.58	3.94	58.78



2 Conductor						
26	0.085	0.095	7.10	2.16	2.41	10.56
24	0.087	0.097	8.75	2.21	2.46	13.02
22	0.100	0.114	11.20	2.54	2.90	16.67
20	0.114	0.132	15.30	2.90	3.35	22.77
18	0.129	0.151	20.80	3.28	3.84	30.95
16	0.143	0.165	25.00	3.63	4.19	37.20
14	0.169	0.191	36.00	4.29	4.85	53.57
12	0.212	0.234	53.00	5.38	5.94	78.86
10	0.256	0.282	78.00	6.50	7.16	116.06



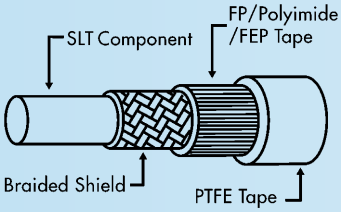
3 Conductor						
26	0.085	0.095	9.30	2.16	2.41	13.84
24	0.094	0.106	11.40	2.39	2.69	16.96
22	0.100	0.117	15.10	2.54	2.97	22.47
20	0.118	0.134	20.70	3.00	3.40	30.80
18	0.132	0.156	28.45	3.35	3.96	42.33
16	0.147	0.171	34.68	3.73	4.34	51.60
14	0.174	0.201	51.00	4.42	5.11	75.89
12	0.219	0.248	75.50	5.56	6.30	112.34
10	0.270	0.304	115.00	6.86	7.72	171.12

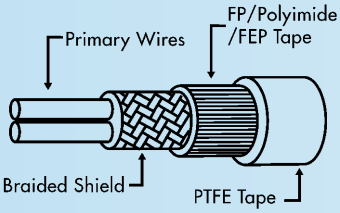


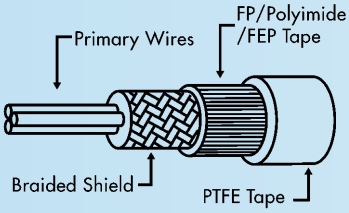
4 Conductor						
26	0.092	0.104	11.40	2.34	2.64	16.96
24	0.103	0.115	14.10	2.62	2.92	20.98
22	0.113	0.128	18.90	2.87	3.25	28.12
20	0.131	0.148	26.10	3.33	3.76	38.84
18	0.148	0.172	36.30	3.76	4.37	54.01
16	0.165	0.189	44.50	4.19	4.80	66.22
14	0.194	0.223	66.80	4.93	5.66	99.40
12	0.243	0.276	98.00	6.17	7.01	145.82
10	0.300	0.339	150.00	7.62	8.61	223.20

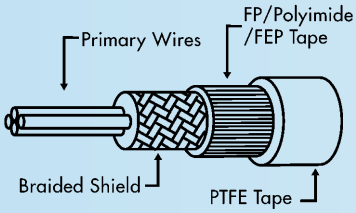
SLT Flat Shielded & Jacketed • Thin Wall

M27500 WB, WC, WE, WP, WR



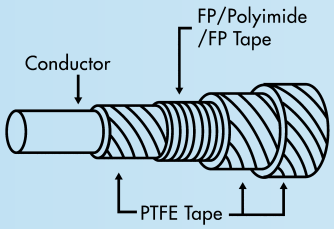






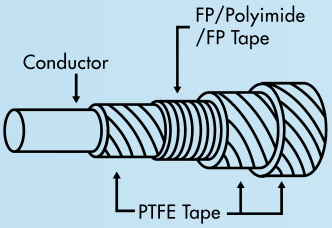
AWG	Diameter (inches)		Weight (lbs/1000ft)	Diameter (MM)		Weight (kg/km)
	Min	Max	Max	Min	Max	Max
1 Conductor						
26	0.044	0.051	2.98	1.12	1.30	4.43
24	0.049	0.055	3.77	1.24	1.40	5.61
22	0.054	0.061	4.77	1.37	1.55	7.10
20	0.061	0.070	6.71	1.55	1.78	9.98
18	0.070	0.078	9.25	1.78	1.98	13.76
16	0.076	0.086	11.17	1.93	2.18	16.62
14	0.089	0.099	16.00	2.26	2.51	23.81
12	0.108	0.120	23.60	2.74	3.05	35.12
10	0.131	0.143	35.50	3.33	3.63	52.82
2 Conductor						
26	0.075	0.083	5.29	1.91	2.11	7.87
24	0.076	0.086	6.60	1.93	2.18	9.82
22	0.086	0.100	8.76	2.18	2.54	13.03
20	0.101	0.117	12.50	2.57	2.97	18.60
18	0.120	0.138	17.50	3.05	3.51	26.04
16	0.134	0.152	21.65	3.40	3.86	32.22
14	0.159	0.179	31.24	4.04	4.55	46.49
12	0.202	0.222	47.60	5.13	5.64	70.83
10	0.248	0.268	72.00	6.30	6.81	107.14
3 Conductor						
26	0.074	0.084	7.05	1.88	2.13	10.49
24	0.083	0.095	8.89	2.11	2.41	13.23
22	0.089	0.106	12.20	2.26	2.69	18.15
20	0.107	0.123	17.55	2.72	3.12	26.11
18	0.121	0.145	25.00	3.07	3.68	37.20
16	0.136	0.160	30.90	3.45	4.06	45.98
14	0.163	0.190	45.20	4.14	4.83	67.26
12	0.208	0.237	69.50	5.28	6.02	103.42
10	0.256	0.288	105.00	6.50	7.32	156.24
4 Conductor						
26	0.081	0.093	8.89	2.06	2.36	13.23
24	0.092	0.104	11.40	2.34	2.64	16.96
22	0.102	0.117	15.70	2.59	2.97	23.36
20	0.120	0.137	22.70	3.05	3.48	33.78
18	0.137	0.161	32.50	3.48	4.09	48.36
16	0.154	0.178	40.30	3.91	4.52	59.97
14	0.183	0.212	59.00	4.65	5.38	87.79
12	0.232	0.265	90.00	5.89	6.73	133.92
10	0.285	0.324	138.00	7.24	8.23	205.34

TLS Single Conductor • Thick Wall



AWG	Diameter (inches)		Weight (lbs/1000ft)	Diameter (MM)		Weight (kg/km)
	Min	Max	Max	Min	Max	Max
24	0.060	0.066	3.75	1.52	1.68	5.58
22	0.064	0.070	4.90	1.63	1.78	7.29
20	0.070	0.078	6.60	1.78	1.98	9.82
18	0.080	0.088	9.20	2.03	2.24	13.69
16	0.086	0.096	11.20	2.18	2.44	16.67
14	0.097	0.111	15.90	2.46	2.82	23.66
12	0.116	0.130	23.60	2.95	3.30	35.12
10	0.137	0.153	36.00	3.48	3.89	53.57
8	0.185	0.203	62.60	4.70	5.16	93.15
6	0.225	0.243	94.90	5.72	6.17	141.2
4	0.280	0.308	149.5	7.11	7.82	222.5
2	0.356	0.376	230.6	9.04	9.55	343.1
1	0.399	0.425	290.0	10.13	10.80	431.5
1/0	0.435	0.465	362.0	11.05	11.81	538.7
2/0	0.485	0.515	451.0	12.32	13.08	671.1
3/0	0.540	0.590	563.0	13.72	14.99	837.7
4/0	0.590	0.640	701.0	14.99	16.26	1043

TLA Single Conductor • Thick Wall Aluminum

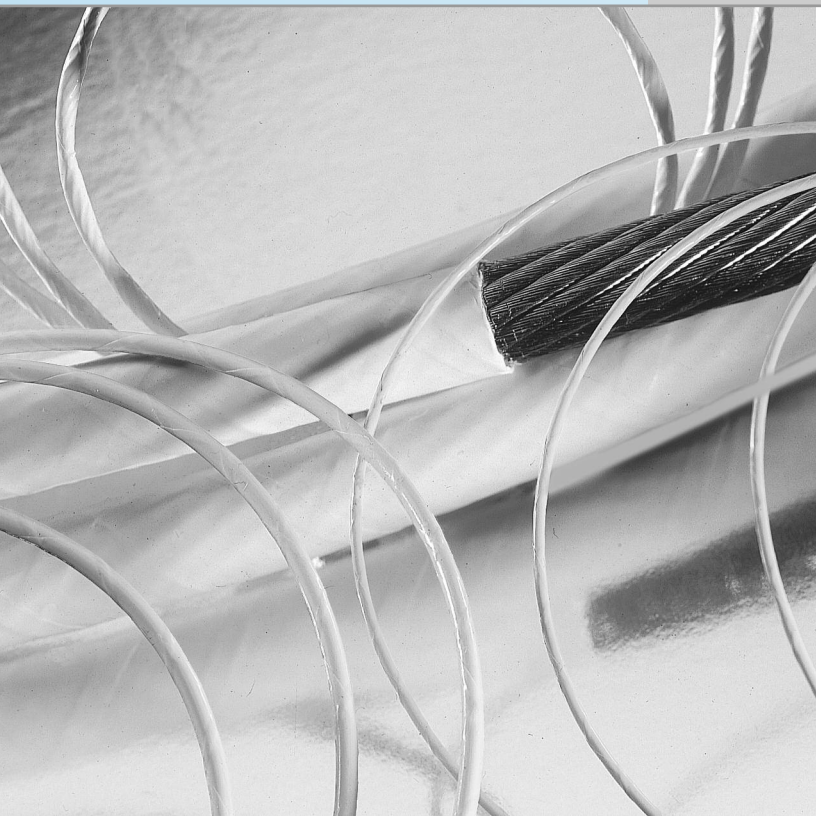


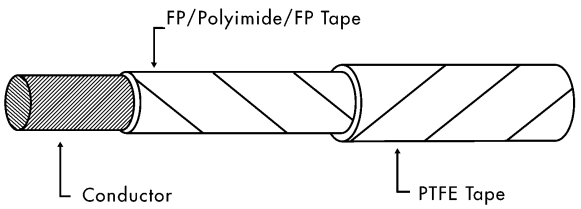
8	0.187	0.207	28.1	4.75	5.26	41.81
6	0.238	0.258	42.9	6.05	6.55	63.84
4	0.284	0.314	61.5	7.21	7.98	91.51
2	0.352	0.382	93.5	8.94	9.70	139.1
1	0.390	0.420	119.4	9.91	10.67	177.7
1/0	0.440	0.470	142.3	11.18	11.94	211.7
2/0	0.490	0.530	177.0	12.45	13.46	263.4
3/0	0.547	0.587	218.0	13.89	14.91	324.4
4/0	0.599	0.639	268.0	15.21	16.23	398.8

TLR Metric Overview

SINGLE CONDUCTOR
EN2267-010 (DR)

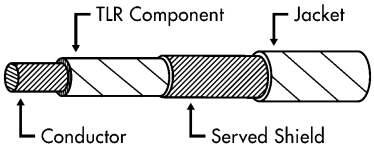
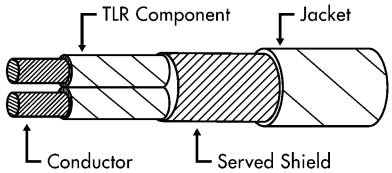
Tensolite Part Number	EN Reference	AWG	Diameter (inches)		Weight (lbs/1000ft)	Diameter (MM)		Weight (kg/km)
			Min	Max	Max	Min	Max	Max
TLR-260-26NA	EN 2267-010-A 001S	26	0.0295	0.0331	1.40	0.75	0.84	2.08
TLR-260-24NA	EN 2267-010-A 002S	24	0.0335	0.0378	1.83	0.85	0.96	2.72
TLR-260-22N	EN 2267-010-A 004S	22	0.0394	0.0433	2.78	1.00	1.10	4.14
TLR-260-20N	EN 2267-010-A 006S	20	0.0480	0.0528	4.60	1.22	1.34	6.85
TLR-260-18N	EN 2267-010-A 010S	18	0.0575	0.0634	7.01	1.46	1.61	10.43
TLR-260-16N	EN 2267-010-A 012S	16	0.0693	0.0756	9.82	1.76	1.92	14.61
TLR-260-14N	EN 2267-010-A 020S	14	0.0803	0.0882	13.29	2.04	2.24	19.78
TLR-260-12N	EN 2267-010-A 030S	12	0.0984	0.1063	21.06	2.50	2.70	31.33
TLR-260-10N	EN 2267-010-A 051S	10	0.1232	0.1311	33.50	3.13	3.33	49.85
TLR-260-8N	EN 2267-010-A 090S	8	0.1614	0.1732	60.48	4.10	4.40	90.00
TLR-260-6N	EN 2267-010-A 140S	6	0.2087	0.2244	90.73	5.30	5.70	135.0
TLR-260-4N	EN 2267-010-A 220S	4	0.2638	0.2917	149.2	6.70	7.41	222.0
TLR-260-2N	EN 2267-010-A 340S	2	0.3260	0.3606	233.2	8.28	9.16	347.0





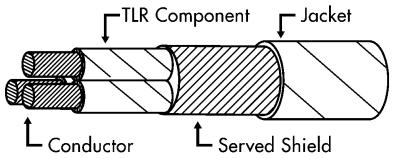
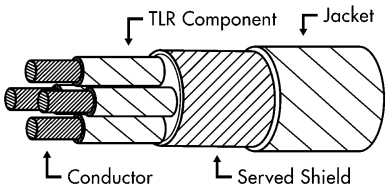
TLR Metric

SHIELDED AND JACKETED - EN2714-013 (ML) & -014 (MM)

Tensolite Part Number	EN Reference	AWG	Diameter (inches) Max	Weight (lbs/1000ft) Max	Diameter (MM) Max	Weight (kg/km) Max
1 Conductor - EN2714-013 ML A						
TLR-260-1NJ-26NA	EN 2714-013-A 001F	26	0.052	3.15	1.31	4.68
TLR-260-1NJ-24NA	EN 2714-013-A 002F	24	0.057	3.87	1.45	5.76
TLR-260-1NJ-22N	EN 2714-013-A 004F	22	0.063	5.05	1.60	7.51
TLR-260-1NJ-20N	EN 2714-013-A 006F	20	0.072	7.24	1.84	10.77
TLR-260-1NJ-18N	EN 2714-013-A 010F	18	0.082	10.06	2.08	14.97
TLR-260-1NJ-16N	EN 2714-013-A 012F	16	0.096	14.09	2.43	20.97
TLR-260-1NJ-14N	EN 2714-013-A 020F	14	0.108	18.17	2.74	27.03
TLR-260-1NJ-12N	EN 2714-013-A 030F	12	0.126	26.68	3.20	39.70
TLR-260-1NJ-10N	EN 2714-013-A 051F	10	0.153	41.63	3.89	61.94
2 Conductor - EN2714-013 ML B						
TLR-260-2NJ-26NA	EN 2714-013-B 001F	26	0.084	5.49	2.13	8.17
TLR-260-2NJ-24NA	EN 2714-013-B 002F	24	0.094	6.88	2.40	10.23
TLR-260-2NJ-22N	EN 2714-013-B 004F	22	0.106	9.17	2.70	13.64
TLR-260-2NJ-20N	EN 2714-013-B 006F	20	0.127	14.15	3.22	21.05
TLR-260-2NJ-18N	EN 2714-013-B 010F	18	0.146	19.84	3.71	29.52
TLR-260-2NJ-16N	EN 2714-013-B 012F	16	0.172	27.69	4.38	41.20
TLR-260-2NJ-14N	EN 2714-013-B 020F	14	0.198	37.52	5.04	55.83
TLR-260-2NJ-12N	EN 2714-013-B 030F	12	0.240	58.33	6.09	86.79
TLR-260-2NJ-10N	EN 2714-013-B 051F	10	0.291	87.71	7.39	130.51

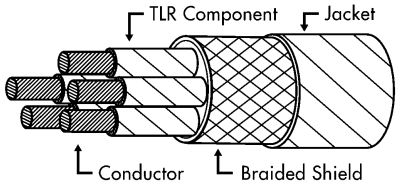
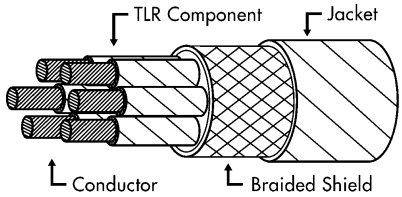
TLR Metric

SHIELDED AND JACKETED - EN2714-013 (ML) & -014 (MM)

Tensolite Part Number	EN Reference	AWG	Diameter (inches)	Weight (lbs/1000ft)	Diameter (MM)	Weight (kg/km)
			Max	Max	Max	Max
3 Conductor - EN2714-013 ML C						
TLR-260-3NJ-26NA	EN 2714-013-C 001F	26	0.089	7.35	2.26	10.94
TLR-260-3NJ-24NA	EN 2714-013-C 002F	24	0.102	9.89	2.59	14.72
TLR-260-3NJ-22N	EN 2714-013-C 004F	22	0.115	13.28	2.91	19.76
TLR-260-3NJ-20N	EN 2714-013-C 006F	20	0.137	20.46	3.48	30.44
TLR-260-3NJ-18N	EN 2714-013-C 010F	18	0.157	28.87	4.00	42.96
TLR-260-3NJ-16N	EN 2714-013-C 012F	16	0.186	40.77	4.73	60.67
TLR-260-3NJ-14N	EN 2714-013-C 020F	14	0.212	52.98	5.39	78.83
TLR-260-3NJ-12N	EN 2714-013-C 030F	12	0.256	82.47	6.50	122.72
TLR-260-3NJ-10N	EN 2714-013-C 051F	10	0.311	125.46	7.90	186.69
4 Conductor - EN2714-013 ML D						
TLR-260-4NJ-26NA	EN 2714-013-D 001F	26	0.099	9.79	2.51	14.57
TLR-260-4NJ-24NA	EN 2714-013-D 002F	24	0.112	12.41	2.84	18.47
TLR-260-4NJ-22N	EN 2714-013-D 004F	22	0.126	16.83	3.19	25.04
TLR-260-4NJ-20N	EN 2714-013-D 006F	20	0.150	26.08	3.82	38.81
TLR-260-4NJ-18N	EN 2714-013-D 010F	18	0.174	37.11	4.41	55.22
TLR-260-4NJ-16N	EN 2714-013-D 012F	16	0.206	52.43	5.23	78.02
TLR-260-4NJ-14N	EN 2714-013-D 020F	14	0.239	72.15	6.06	107.36

TLR Metric

SHIELDED AND JACKETED

Tensolite Part Number	EN Reference	AWG	Diameter (inches)	Weight (lbs/1000ft)	Diameter (MM)	Weight (kg/km)
			Max	Max	Max	Max
5 Conductor - EN2714-014 MM E						
TLR-260-4NJ-18N	EN 2714-014-E 010F	18	0.207	51.08	5.26	76.00
TLR-260-4NJ-16N	EN 2714-014-E 012F	16	0.240	68.68	6.10	102.20
TLR-260-4NJ-14N	EN 2714-014-E 020F	14	0.278	90.73	7.05	135.00
TLR-260-4NJ-12N	EN 2714-014-E 030F	12	0.331	138.17	8.41	205.60
7 Conductor - EN2714-014 ML G						
TLR-260-7NJ-24NA	EN 2714-014-G 002F	24	0.150	23.25	3.80	34.60

AS22759/80-92 REV. A

(REPLACES MIL-DTL-81381 & AS22759/32-46)

ST SINGLE CONDUCTOR - MEDIUM WALL

AWG	/86 SCC 200°C	/87 NCC 260°C	/88 TCC 150°C	/89 SCCA 200°C	/90 NCCA 260°C	Diameter (inches Min	Diameter (inches Max	Weight (lbs/1000ft) Max	Diameter (MM) Min	Diameter (MM) Max	Weight (kg/km) Max
26	•	•		•	•	0.033	0.037	1.55	0.84	0.94	2.31
24	•	•		•	•	0.038	0.042	2.20	0.97	1.07	3.27
22	•	•	•	•	•	0.043	0.047	3.00	1.09	1.19	4.46
20	•	•	•	•	•	0.051	0.055	4.55	1.30	1.40	6.77
18	•	•	•			0.061	0.065	6.70	1.55	1.65	9.97
16	•	•	•			0.068	0.073	8.60	1.73	1.85	12.80
14	•	•	•			0.081	0.086	12.95	2.06	2.18	19.27
12	•	•	•			0.100	0.105	20.10	2.54	2.67	29.91
10	•	•	•			0.122	0.127	31.40	3.10	3.23	46.72
8	•	•	•			0.180	0.188	57.60	4.57	4.78	85.71
6	•	•	•			0.219	0.229	88.30	5.56	5.82	131.4
4	•	•	•			0.276	0.288	143.0	7.01	7.32	212.8
2	•	•	•			0.344	0.364	223.0	8.74	9.25	331.8
1	•	•	•			0.388	0.408	289.0	9.86	10.36	430.0
0	•	•	•			0.420	0.450	345.0	10.67	11.43	513.4
00	•	•	•			0.475	0.505	432.0	12.07	12.83	642.8
000	•	•	•			0.530	0.560	542.0	13.46	14.22	806.5
0000	•	•	•			0.590	0.630	681.0	14.99	16.00	1013

ST SINGLE CONDUCTOR - MEDIUM WALL WITH BRAID

AWG	/80 TCC 150°C	/81 SCCA 200°C	/82 NCCA 260°C	/91 SCC 200°C	/92 NCC 260°C	Diameter (inches Min	Diameter (inches Max	Weight (lbs/1000ft) Max	Diameter (MM) Min	Diameter (MM) Max	Weight (kg/km) Max
2	•	•	•			0.360	0.380	227.0	9.14	9.65	337.8
1	•	•	•			0.400	0.420	295.0	10.16	10.67	439.0
0	•	•	•			0.442	0.462	351.0	11.23	11.73	522.3
00	•	•	•			0.498	0.528	432.0	12.65	13.41	642.8
000	•	•	•			0.554	0.584	542.0	14.07	14.83	806.5
0000•	•	•			0.615	0.655	689.0	15.62	16.64	1025	

SLT SINGLE CONDUCTOR - THIN WALL

AWG	/80 TCC 150°C	/81 SCCA 200°C	/82 NCCA 260°C	/91 SCC 200°C	/92 NCC 260°C	Diameter (inches Min	Diameter (inches Max	Weight (lbs/1000ft) Max	Diameter (MM) Min	Diameter (MM) Max	Weight (kg/km) Max
26		•	•	•	•	0.030	0.034	1.43	0.76	0.86	2.13
24		•	•	•	•	0.034	0.038	1.93	0.86	0.97	2.87
22	•	•	•	•	•	0.040	0.043	2.85	1.02	1.09	4.24
20	•	•	•	•	•	0.048	0.051	4.38	1.22	1.30	6.52
18	•	•	•			0.056	0.060	6.60	1.42	1.52	9.82
16	•	•	•			0.063	0.067	8.30	1.60	1.70	12.35
14	•	•	•			0.076	0.080	12.60	1.93	2.03	18.75
12	•	•	•			0.096	0.100	19.60	2.44	2.54	29.16
10	•	•	•			0.119	0.123	30.60	3.02	3.12	45.53

Temperature Requirements

Determines Conductor Selection

150°C

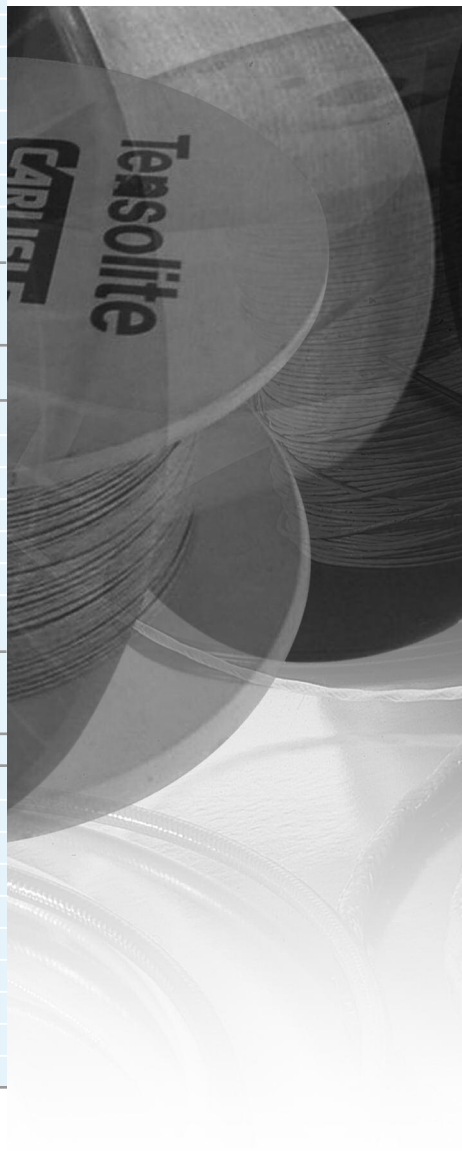
TCC —Tin Coated Copper

200°C

SCC—Silver-Coated Copper
SCCA—Silver Coated Copper Alloy

260°C

NCC–Nickel-Coated Copper
NCCA–Nickel Coated Copper Alloy



WC27500 Primary Wire Codes

SPECIFICATIONS	M27500 SYMBOL
AS22759/80	WB
AS22759/81	WC
AS22759/82	WE
AS22759/83	WF
AS22759/84	WG
AS22759/85	WH
AS22759/86	WJ
AS22759/87	WK
AS22759/88	WL
AS22759/89	WM
AS22759/90	WN
AS22759/91	WP
AS22759/92	WR

TUFFLITE® Approvals

BOEING • BMS 13-60

BOEING (DOUGLAS) • DMS 2426

AS22759/80-92

BELL HELICOPTER • 30 & 140 SERIES

LOCKHEED MARTIN • 5PTM SERIES

AGUSTA • EE 194-199

ASD • EN 2267-010

TUFFLITE® Replaces

BMS • 13-31, 13-48, 13-51

BXS • 7007, 7008

AS22759/5-/8

AS22759/11-/12

AS22759/16-/19

AS22759/22-/23

AS22759/32-/46

MIL-DTL-81381

MIL-DTL-17 Coaxial Cables

A Tensolite coaxial cable is a transmission line in which one conductor is centered inside and insulated from an outer flexible metal braid that serves as the second outer conductor.

The basic dielectric material for coaxial cables supplied by Tensolite is PTFE because of its electrical and mechanical performance. Some attractive properties of PTFE are extremely low loss, high dielectric strength, no measurable water absorption, and electrical efficiency at both high and low temperatures.

Common Conductors*	Shield Wires:	Jacket
Solid or Stranded	Silver Coated Copper	FEP
Silver Coated Copper Covered Steel		PFA
Silver Coated Copper		
Silver Coated Copper Alloy		

**Other conductor materials may be used to give maximum strength, flexibility and conductivity properties to completed cable.*

Description (Tensolite Part Number)	Conductor AWG	Conductor Construction	Swept Version Yes/No	Impedance
M17/60-RG142	18	Solid	yes	50 ohms
M17/86-00001	12	Stranded	no	50 ohms
M17/93-RG178	30	Stranded	yes	50 ohms
M17/94-RG179	30	Stranded	no	75 ohms
M17/95-RG180	30	Stranded	no	95 ohms
M17/110-RG302	22	Solid	no	75 ohms
M17/111-RG303	18	Solid	yes	50 ohms
M17/113-RG316	25	Stranded	yes	50 ohms
M17/127-RG393	12	Stranded	yes	50 ohms
M17/128-RG400	20	Stranded	yes	50 ohms
M17/136-00001	30	Stranded	no	75 ohms
M17/137-00001	30	Stranded	no	95 ohms
M17/152-00001	25	Stranded	yes	50 ohms
M17/158-00001	18	Solid	no	50 ohms
M17/169-00001	30	Stranded	no	50 ohms
M17/170-00001	18	Solid	no	50 ohms
M17/172-00001	25	Stranded	no	50 ohms
M17/174-00001	12	Stranded	no	50 ohms
M17/175-00001	20	Stranded	no	50 ohms
M17/176-00002	24	Stranded	no	77 ohms balanced line

MIL Spec Approval Summary

NEMA HP-3(PTFE) and HP-4(FEP) (Formerly MIL-W-16878)

This specification covers unshielded wire for hook-up and lead wiring for electrical and electronic components and equipment. The following table is a partial list of the more popular constructions. Further details on all the constructions in this specification can be found in Tensolite's Product and Technical Handbook.

Traditional Call Out	Voltage Rating	Temperature Rating (°C)	Insulation	AWG	Nominal Wall Thickness (in.)
Type E	600	200	PTFE	32-10	0.010
Type EE	1000	200	PTFE	32-10	0.015
Type ET	250	200	PTFE	32-20	0.006
Type K	600	200	FEP	32-8	0.010
Type KK	1000	200	FEP	32-4/0	0.015
Type KT	250	200	FEP	32-20	0.016

AS22759

This specification covers fluoropolymer-insulated single conductor electrical wires. These wires are suitable for installation on aerospace electrical systems within the limitations of applicable performance requirements. Further details can be found in Tensolite's Product and Technical Handbook or in AS22759 specifications.

Type	Voltage Rating	Temperature Rating (°C)	Insulation	AWG	Nominal Wall Thickness (in,)
22759/1	600	200	PTFE/Glass	22-4/0	0.025 - 0.055
22759/2	600	260	PTFE/Glass	22-2/0	0.025 - 0.055
22759/3	600	260	PTFE/Glass	22-2/0	0.020 - 0.055
22759/4	600	200	PTFE/Glass/FEP	22-2/0	0.021 - 0.055
22759/5	600	200	Mineral Filled PTFE	24-10	0.025 - 0.044
22759/6	600	260	Mineral Filled PTFE	24-10	0.025 - 0.044
22759/7	600	200	Mineral Filled PTFE	24-10	0.014 - 0.036
22759/8	600	260	Mineral Filled PTFE	24-10	0.014 - 0.036
22759/9	1000	200	PTFE	28-10	0.014 - 0.023
22759/10	1000	260	PTFE	28-10	0.014 - 0.023
22759/11	600	200	PTFE	28-10	0.009 - 0.021
22759/12	600	260	PTFE	28-10	0.009 - 0.021
22759/20	1000	200	PTFE	28-20	0.014
22759/21	1000	260	PTFE	28-20	0.014
22759/22	600	200	PTFE	28-30	0.009
22759/23	600	260	PTFE	28-30	0.009
22759/28	600	200	PTFE/Polyimide Top coat	28-16	0.009 - 0.012
22759/29	600	260	PTFE/Polyimide Top coat	28-16	0.009 - 0.012
22759/30	600	200	PTFE/Polyimide Top coat	28-20	0.010
22759/31	600	260	PTFE/Polyimide Top coat	28-20	0.010
22759/80	600	150	PTFE/Polyimide	26-10	0.006
22759/81	600	200	PTFE/Polyimide	26-20	0.006
22759/82	600	260	PTFE/Polyimide	26-20	0.006
22759/83	600	200	PTFE/Polyimide /NOMEX	2-4/0	0.017
22759/84	600	260	PTFE/Polyimide /NOMEX	2-4/0	0.017
22759/85	600	150	PTFE/Polyimide /NOMEX	2-4/0	0.017
22759/86	600	200	PTFE/Polyimide	26-4/0	0.008 - 0.017
22759/87	600	260	PTFE/Polyimide	26-4/0	0.008 - 0.017
22759/88	600	150	PTFE/Polyimide	26-4/0	0.008 - 0.017
22759/89	600	200	PTFE/Polyimide	26-20	0.008
22759/90	600	200	PTFE/Polyimide	26-20	0.008
22759/91	600	200	PTFE/Polyimide	26-10	0.006
22759/92	600	260	PTFE/Polyimide	26-10	0.006

MIL-DTL-81381

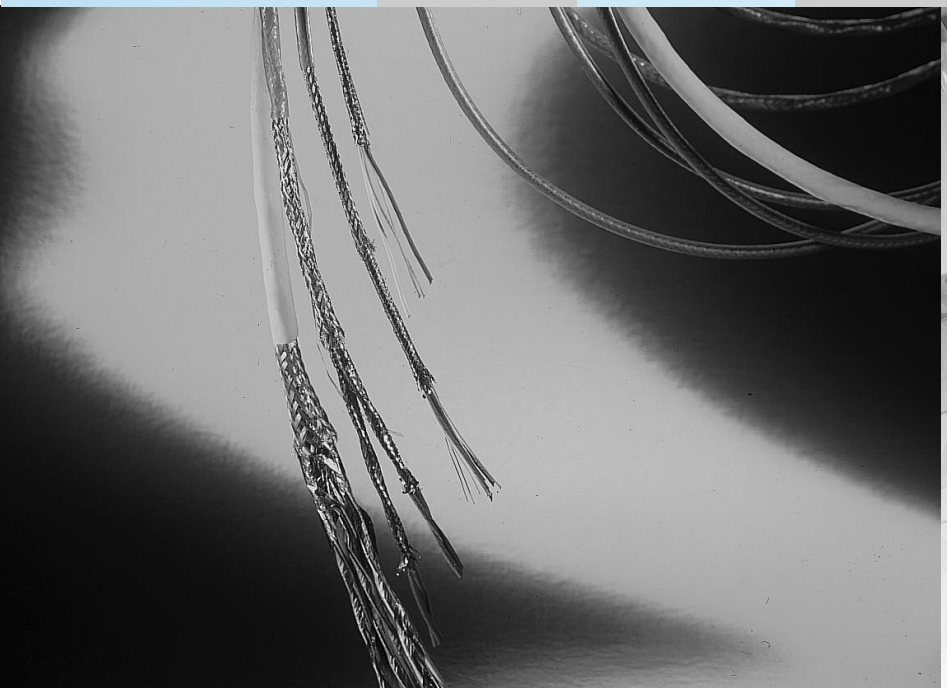
This specification covers polyimide-insulated single conductor electrical wires. These wires are suitable for installation on aerospace electrical systems within the limitations of applicable performance requirements. Further details can be found in Tensolite's Product and Technical Handbook or in MIL-DTL-81381 specifications.

Type	Voltage Rating	Temperature Rating (°C)	Insulation	AWG	Nominal Wall Thickness (in.)
81381/7	600	200	Polyimide/FEP	26-10	0.006
81381/8	600	200	Polyimide/FEP	26-10	0.006
81381/9	600	200	Polyimide/FEP	30-20	0.006
81381/10	600	200	Polyimide/FEP	30-20	0.006
81381/11	600	200	Polyimide/FEP	24-2	0.008 - 0.015
81381/12	600	200	Polyimide/FEP	24-2	0.008 - 0.015
81381/13	600	200	Polyimide/FEP	28-20	0.008
81381/14	600	200	Polyimide/FEP	28-20	0.008
81381/17	600	200	Polyimide/FEP	26-12	0.005
81381/18	600	200	Polyimide/FEP	26-12	0.005
81381/19	600	200	Polyimide/FEP	30-20	0.005
81381/20	600	200	Polyimide/FEP	30-20	0.005
81381/21	600	150	Polyimide/FEP	24-10	0.006
81381/22	600	150	Polyimide/FEP	24-2/0	0.008 - 0.015

MIL-W-81822

This specification covers insulated solid conductor wires designed for solderless wrap connections (wire-wrap) in electrical and electronic devices and equipment. Further details can be found in the MIL-W-81822 specification.

Type	Voltage Rating	Temperature Rating (°C)	Insulation	AWG	Nominal Wall Thickness (in.)
81822/4	300	200	PTFE/Polyimide topcoat	30-18	0.005 - 0.007
81822/5	300	200	PTFE/Polyimide tape	30-18	0.005 - 0.007
81822/6	300	200	PTFE	30-18	0.006 - 0.012



WC27500 MIL Spec Summary

Part Numbering Guide

Specification Number	Color Code Designator	Guage of Wire	Basic Wire Spec	Number of Wires	Shield Style	Jacket Style
WC27500	**-**	**22**	**TA**	**2**	**N**	**24**
formerly M27500			M22759/8		Nickel-Coated Copper	Polymide/PTFE

Basic Wire Symbol & Specification

Symbol	Specification	Symbol	Specification	Symbol	Specification
E	AS22759/2	NB	Mil-DTL-81381/14	TN	AS22759/23
EA	AS22759/1	NE	Mil-DTL-81381/17	VA	AS22759/5
JB	AS22759/28	NF	Mil-DTL-81381/18	WA	AS22759/6
JC	AS22759/29	NG	Mil-DTL-81381/19	WB	AS22759/80
JD	AS22759/30	NH	Mil-DTL-81381/20	WC	AS22759/81
JE	AS22759/31	NK	Mil-DTL-81381/21	WE	AS22759/82
JF	AS22759/3	NL	Mil-DTL-81381/22	WF	AS22759/83
LE	AS22759/9	RA	AS22759/3	WG	AS22759/84
LH	AS22759/10	RB	AS22759/4	WH	AS22759/85
MR	Mil-DTL-81381/7	RC	AS22759/11	WJ	AS22759/86
MS	Mil-DTL-81381/8	RE	AS22759/12	WK	AS22759/87
MT	Mil-DTL-81381/9	SA	AS22759/7	WL	ASW-22759/88
MV	Mil-DTL-81381/10	TA	AS22759/8	WM	AS22759/89
MW	Mil-DTL-81381/11	TK	AS22759/20	WN	AS22759/90
MY	Mil-DTL-81381/12	TL	MAS22759/21	WP	AS22759/91
NA	Mil-DTL-81381/13	TM	AS22759/22	WR	AS-22759/92

Color Code Designations

Designation	1 cond	2 cond	3 cond	4 cond	5 cond	6 cond	Shield Coverage
–	9	9,96	9, 96, 93	9, 96, 93, 95	9, 96, 93, 95, 92	9, 96, 93, 95,92, 90	85%
A		9,6	9, 6, 3	9, 6, 3, 5	9, 6, 3, 5, 2	9, 6, 3, 5, 2, 0	85%
B	Solid color, color denotes wire size (ref Table III C, per spec), Identify wire by banding marks (ref Table III D, per spec)						85%
F		92, 96	92, 96, 94	92, 96, 94, 95	92, 96, 94, 95, 9	92, 96, 94, 95, 9, 90	85%
G		2, 6	2, 6, 4	2, 6, 4, 5	2, 6, 4, 5, 9	2, 6, 4, 5, 9, 0	85%

Common color codes. Reference WC27500 for complete color code listings.

Shield Symbol Guide

Symbol	Double Shield	Shield style
U		No Shield
T	V	Tin Coated Copper, round
S	W	Silver Coated Copper, round
N	Y	Nickel Coated Copper, round
F	Z	Stainless Steel, round
C	R	27% Nickel Coated Copper, round
M	K	Silver Coated High Strength Copper Alloy, round
P	L	Nickel Coated High Strength Copper Alloy, round
G	A	Silver Coated Copper, flat
H	B	Silver Coated High Strength Copper Alloy, flat
*	#	Nickel Coated Copper, flat
J	D	Tin Coated Copper, flat
E	X	Nickel Coated High Strength Copper Alloy, flat

Jacket Symbol Guide

Single Jacket	Double Jacket	Jacket style
00	**00**	**No Jacket**
05	**55**	**Extruded Clear FEP**
06	**56**	**Extruded or Tape PTFE**
07	**57**	**White PTFE Impregnated Glass over PTFE Tape**
09	**59**	**Extruded White FEP**
11	**61**	**Polymide/FEP Tape with FEP outer surface**
12	**62**	**Polymide/FEP Tape - Polymide Surface exposed Sintered TFE Barrier Tape**
14	**64**	**Extruded White ETFE**
15	**65**	**Extruded Clear ETFE**
16	**66**	**Braid of Aromatic Polyamide with high temperature finish over PTFE Tape**
20	**70**	**Extruded White PFA**
21	**71**	**Extruded Clear PFA**
22	**72**	**Polyimide/FEP Tape with opaque polyimide outer surface**
24	**74**	**Tape layer of PTFE wrapped over a tape layer of natural Polyimide/FEP**

RF/Microwave Coaxial Cables

Low Loss Flexible (LLF) Series

Features and Benefits

Excellent for use in the broadest range of operating frequency

Both extruded and tape wrapped expanded dielectric as well as solid PTFE

Greater cost efficiency. Any needed Velocity of Propagation from 69% to 83% can be created for your specific application and requirement.

Excellent flex attenuation stability

Provides optimal signal integrity over the broadest range of flexibility and bend radius with minimal shifts in the cables electrical characteristics.

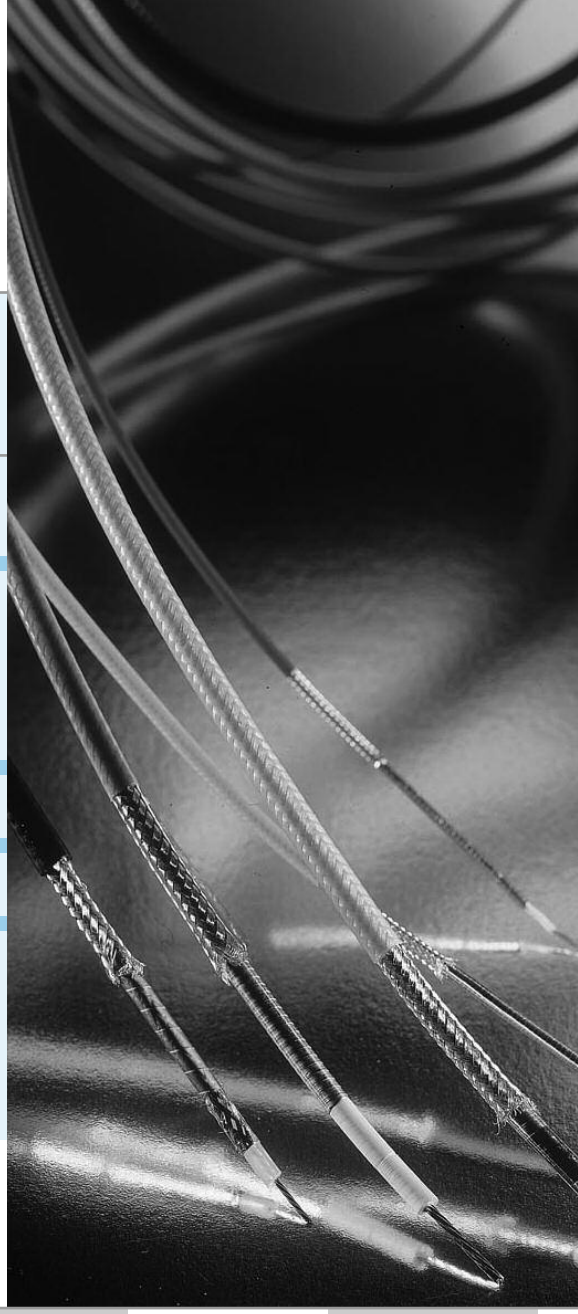
Excellent phase to temperature stability

Provides optimal signal integrity over the broadest range of temperature changes.

Velocity range of 69 percent to 83 percent

The widest range of Velocity of Propagation choices that meet or exceed the performance ratings of MIL-C-17 and RG coax cables while providing the smallest outer diameter possible.

Low Loss Flexible (LLF) Series



Features and Benefits

- Greater than 90 dB/ft shielding effectiveness
- VSWR less than 1.15:1 to 5GHz and 1.20:1from 5 to 18GHz, and 1.30:1 from 18 to 26 GHz and 1.50:1 from 26 to 40 GHz
- Excellent attenuation with flex stability
- Superior phase with flex performance
- Excellent vibration performance

Part Numbering Guide

Frequency	Jacket	Construction	Cable Size (over shield)	Velocity of Propagation	Stranding	Impedance	Impedance Tolerance
LLF	**Q** –	**1**	**000**	**A**	**S** –	**75** /	**2**
LLF = 18 GHz MFF = 26 GHz HFF = 40 GHz	- = FEP P = Polyurethane Q = PFA	1 = Helical/Round 2 = Flat/Round 3 = Round/Round 4 = Flat/Foil/Round		- = 69% (nom) A = 77% (nom) B = 82% (nom)	- = Solid S = Stranded	- = 50 ohms 75 = 75 ohms	- = +/- 2 ohms (50) - = +/- 3 ohms (75) 2 = +/- 2 ohms (75) 1 = +/- 1 ohms .5 = +/- .5 ohms .25 = +/- .25 ohms

Microwave Cables

Flexible (LLF) Series

Part Number Cable Code	LLF-1087 461	LLF-1141 463	LLF-1250 465	LLF-1087-75 837	LLFP-1087S 561	LLFP-1141S 563	LLFP-1250S 565	HFF-1087 794
Mechanical Traits								
Conductor Construction	Solid SCCS	Solid SCCS	Solid SC	Solid SCCS	Stranded SC	Stranded SC	Stranded SC	Solid SCCS
Conductor Diameter	0.020"	0.037"	0.064"	0.011"	0.021"	0.038"	0.068"	0.020"
Dielectric Material	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE
Dielectric Diameter	0.064"	0.118"	0.211"	0.065"	0.063"	0.116"	0.211"	0.064"
Shield Type(s)					SC Strip + SC Braid			
Shield Diameter	0.086"	0.142"	0.248"	0.087"	0.086"	0.140"	0.252"	0.086"
Jacket Material	FEP	FEP		FEP	Polyurethane	Polyurethane	Polyurethane	FEP
Jacket Diameter	0.105"	0.163"	0.275"	0.105"	0.115	0.185"	0.290"	0.105"
Weight (lb/ft)	0.013	0.030	0.090	0.013	0.013	0.029	0.085	0.013
Min Bend Radius (in)	0.5	0.8	1.4	0.5	0.6	0.9	1.5	0.5
Electrical Traits								
Impedance (ohms)	50	50	50	75	50	50	50	50
Capacitance (pF/ ft)	29	29	29	20	29	29	29	29
Velocity of Propagation								
(%)	70	70	70	70	70	70	70	70
Max Operating Voltage								
(Vms)	1,500	1,900	3,000	900	1,500	1,900	3,000	1,500
Max Operating Frequency								
(GHz)	18	18	18	3	18	18	4	40
Shielding Effectiveness								
(dB/ft)	90	90	90	90	90	90	90	90
Attenuation (dB/100')								
@ 0.4 GHz	13.7	7.2	4.2	13.7	14.6	7.7	4.2	13.7
@ 1.0 GHz	22.2	11.6	7.2	22.2	23.4	12.6	7.6	22.2
@ 3.0 GHz	38.9	21.2	13.9	38.9	41.6	22.6	15.2	38.9
@ 5.0 GHz	51.0	28.3	18.9		54.6	30.5		51.0
@ 10.0 GHz	74.9	43.0	29.6		79.6	45.8		74.9
@ 18.0 GHz	104.3	61.5	44.3		110.6	65.3		104.3
@ 26.5 GHz								128.7
@ 40.0 GHz								176.5

Microwave Cables

Low Loss Flexible (LLF) Series

Part Number Cable Code	MFF-4063A	LLFQ-1078A	LLFQ-1082AS	LLF-1111A	LLF-1120AS	LLF-1108B	MFF-1130A	LLF-1170B	LLFQ-1282B
Mechanical Traits									
Conductor Construction	Solid SC	Solid SC	Stranded SC	Solid SC	Solid SC	Solid SC	Stranded SC	Solid SC	Solid SC
Conductor Diameter	0.0134"	0.020"	0.024"	0.0298"	0.032"	0.030"	0.0359"	0.054"	0.0870"
Dielectric Material	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE
Dielectric Diameter	0.040"	0.061"	0.066"	0.087"	0.092"	0.083"	0.108"	0.145"	0.244"
Shield Diameter	0.047"	0.078"	0.082"	0.093"	0.097"	0.108"	0.132"	0.170"	0.256"
Jacket Material	FEP	PFA	PFA	FEP	FEP	FEP	FEP	FEP	PFA
Jacket Diameter	0.080"	0.095"	0.097"	0.125"	0.132"	0.120"	0.150"	0.190"	0.306"
Weight (lb/ft)	0.0069	0.010	0.010	0.0213	0.0201	0.016	0.0302	0.038	0.0869
Min Bend Radius (in)	0.4"	0.5"	0.5"	0.625"	0.66"	0.6"	1.5"	0.9"	3.05"
Electrical Traits									
Impedance (ohms)	50	50	50	50	50	50	50	50	50
Capacitance (pF/ ft)	29	27	27	27	27	25	27	25	25
Velocity of Propagation									
(%)	76	77	77	77	77	82	77	82	82
Max Operating Voltage									
(Vms)	600	800	800	800	800	800	800	1,000	1,200
Max Operating									
Frequency (GHz)	26.5	18	18	18	18	18	26.5	18	18
Shielding Effectiveness									
(dB/ft)	90	90	90	90	90	90	90	90	90
Attenuation (dB/100')									
@ 0.4 GHz	21.7	12.4	13.5	8.0	8.5	8.5	6.3	3.2	2.6
@ 1.0 GHz	33.2	19.5	19.7	12.7	13.7	13.7	10.1	5.9	5.0
@ 3.0 GHz	59.4	34.5	36.7	23.7	24.7	23.8	21.3	9.8	7.2
@ 5.0 GHz	77.4	45.1	47.6	31.9	32.6	30.9	27.8	15.1	13.9
@ 10.0 GHz	112.8	76.3	62.3	47.5	48.2	43.6	34.5	22.4	17.0
@ 18.0 GHz	156.8	104.7	87.5	67.4	68.2	58.6	46.4	29.3	23.5

NETflight™

Data Bus, Avionics & IFE Systems

Applications

- Fibre Channel
- Ethernet 10/100/1000 BaseT
- Arinc 628, 629 & 664
- LVDS
- USB
- IEEE 1394
- CEPT-E1
- CAN BUS
- Digital Video Interface (DVI)
- Serial ATA

High speed transmission

The use of extruded, expanded PTFE as the dielectric provides the best time delay performance and the lowest loss. The result is lower attenuation and a larger bandwidth.

Flight proven design

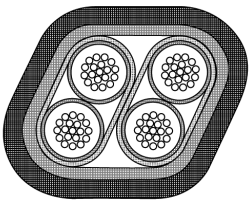
Tensolite data bus cables have provided flight critical data transmission for Boeing's 777 fly-by-wire since 1994.

Low smoke and flame generation

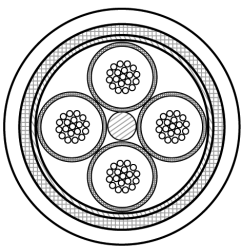
Best balance of properties in material selection leads to very low smoke generation and superior resistance to flammability. Exceeds Requirements of FAR 25.869.

Custom designs available

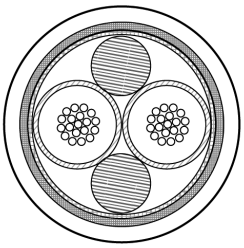
Tensolite produces a variety of configurations from simple twisted, shielded pairs, full duplex and quad cables to complex multi-conductor designs.



Individual
(Duplex)



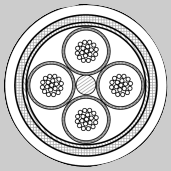
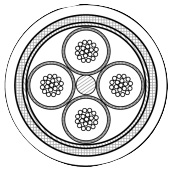
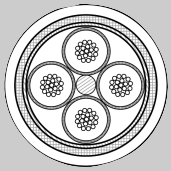
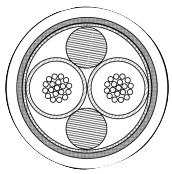
Quad
(Duplex)



Twisted Pair
(Simplex)

NETflight™ Fibre Channel

Lightweight Aerospace Grade Copper Fibre Channel Cables

				
	26473/02006X-4 (LD)	**24483/02006X-4 (LD)**	**22480/02006X-4 (LD)**	**26483/03071X-2 (LD)***
Conductor AWG Size (19 Strand)	26	24	22	26
Conductor Material	SCCA	SCCA	SCC	SCCA
Nom Conductor Diameter (in)	0.0189	0.0233	0.0295	.0190
Insulation Material	PTFE	PTFE	PTFE	PTFE
Nom Insulation Diameter (in)	0.056	0.074	0.089	0.070
Pair #1	White/Green, White/Black	White/Red, White/Black	White/Red, White/Black	White, White/Black
Pair #2	White, White/Blue	White/Green, White/Blue	White/Green, White/Blue	NA
Nom Cable Diameter (in)	0.195	0.242	0.283	0.195
Nom Cable Weight (lbs/1000 ft)	28. 0	40. 0	51. 0	27.0
Impedance ± 10 (Ω)	150	150	150	150
Nom Capacitance (pF/ft)	9	9	9	9
Nom Velocity of Propagation	80%	80%	80%	80%
Typical Delay Skew (ps/ft)	5	3	2	5
Nom. Attenuation (dB/100 ft)				
@ 531 MHz	13	11	9	12
@ 1062 MHz	21	17	13	19

** Flat / Flat Round SCC Shields*

Shielding consists of inner aluminum/polyester tape and outer TCC round braid. The jackets are extruded FEP.

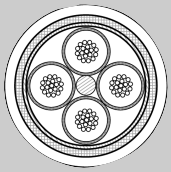
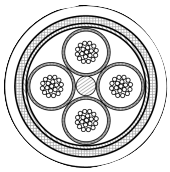
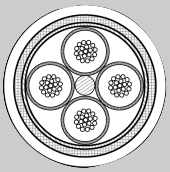
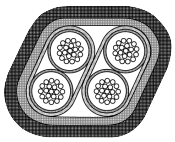
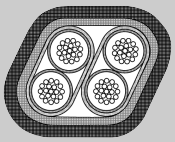
Flammability meets or exceeds FAR25.869 requirements.

SCC - Silver-Coated Copper

SCCA - Silver-Coated Copper Alloy

NETflight™ Ethernet

Aerospace Grade 100BASE-T Ethernet Cables

					
	NF26Q100-01	**NF24Q100-01**	**NF22Q100-01**	**NF24P100**	**NF22P100**
Conductor AWG Size (19 Strand)	26	24	22	24	22
Conductor Material	SCCA	SCCA	SCC	SCCA	SCC
Nom Conductor Diameter (in)	0.0189	0.0233	0.0295	0.0233	0.0295
Insulation Material	PTFE	PTFE	PTFE	PTFE	PTFE
Nom Insulation Diameter (in)	0.038	0.045	0.055	0.063	0.070
Pair #1	Red, Blue	Red, Blue	Red, Blue	Red, Red/Black	Red, Red/Black
Pair #2	Yellow, Green	Yellow, Green	Yellow, Green	Blue, Blue/Black	Blue, Blue/Black
Nom Cable Diameter (in)	0.137	0.163	0.190	0.175 x 0.270	0.195 x 0.290
Nom Cable Weight (lbs/1000 ft)	18.0	24.5	34.5	35.0	43.0
Impedance ± 10%(Ω)	100	100	100	100	100
Nom Capacitance (pF/ft)	13	13	13	13	13
Nom Velocity of Propagation	80%	80%	80%	80%	80%
	10 MHz **100MHz**	**10 MHz** **100MHz**	**10 MHz** **100MHz**	**10 MHz** **100MHz**	**10 MHz** **100MHz**
Nom/Max Attenuation (dB/100 ft)	2.5/3.2 9.3/11.0	2.3/2.7 8.0/9.2	1.8/2.2 6.4/7.3	1.8/2.1 6.0/7.1	1.6/2.0 5.6/6.7
Min NEXT (dB)	50 35	50 35	50 35	53 38	53 38
Min SRL(dB)	23 16	23 16	23 16	23 16	23 16
Cable Budget Length to meet CAT5e Requirements	200 ft (61m)	240 ft (73m)	300 ft (91m)	310 ft (94m)	330 ft (100m)

Shielding consists of inner TCC flat braid and outer TCC round braid. The jackets are extruded FEP. The cables are rated for maximum service of 150° C (200° C rated cables available upon request).

Flammability meets or exceeds FAR25.869 requirements. Smoke and toxicity meet or exceed Boeing and Airbus requirements.

TCC-Tin-Coated Copper

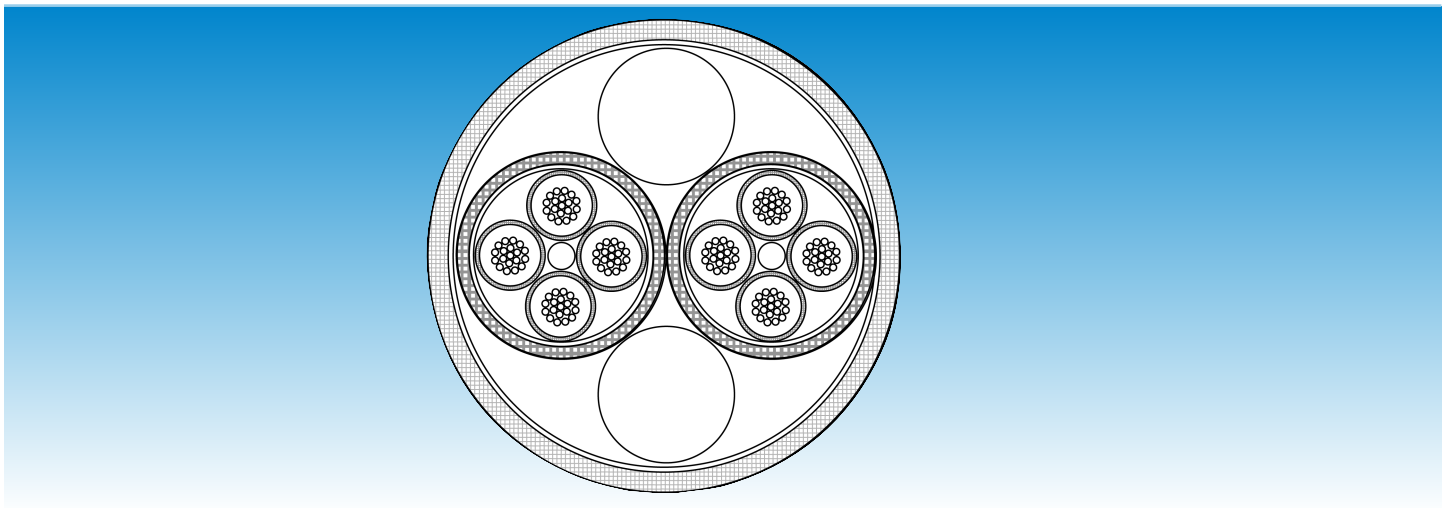
SCC-Silver-Coated Copper

SCCA-Silver-Coated Copper Alloy

Call: 800-458-9960

NETflight™ Ethernet

QUADRAX & RJ-45 Compatible Aerospace Grade 1000BASE-T GIGABIT Ethernet Cables



Part Number	NF26-2Q100			NF24-2Q100		
Conductor AWG Size (19 Strand)	26			24		
Conductor Material	SCCA			SCCA		
Nom Conductor Diameter (in)	0.0190			0.0233		
Insulation Material	PTFE			PTFE		
Nom Insulation Diameter (in)	0.038			0.045		
	Quad #1		Quad #2	Quad #1		Quad #2
Color:	White		Blue	White		Blue
Pair #1	Red—Blue		Red—Blue	Red—Blue		Red—Blue
Pair #2	Yellow—Green		Yellow—Green	Yellow—Green		Yellow—Green
Nom Cable Diameter (in)	0.265			0.305		
Nom Cable Weight (lbs/1000 ft)	45.0			58.0		
Impedance ± 10%(Ω)	100			100		
Nom Capacitance (pF/ft)	13			13		
Nom Velocity of Propagation	80%			80%		
	1 MHz	10 MHz	100 MHz	1 MHz	10 MHz	100MHz
Nom/Max Attenuation (dB/100 ft)	0.9/1.0	2.5/3.2	9.3/11.0	0.7/0.8	2.3/2.7	8.0/9.2
Min NEXT (dB)	65.3	50.3	35.3	65.3	50.3	35.3
Min RL(dB)	20.0	25.0	19.0	20.0	25.0	19.0
Cable Budget Length to meet CAT5e Requirements	200 ft (61m)			240 ft (73m)		

Shielding consists of TCC braids. The jackets are extruded FEP.
The cables are rated for maximum service of 150°C.

Flammability meets or exceeds FAR25.869 requirements.

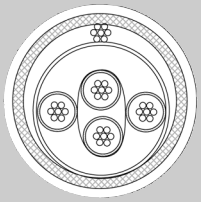
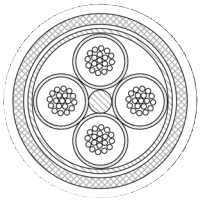
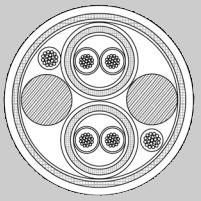
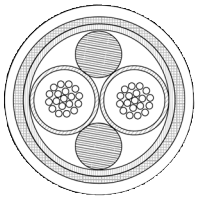
Smoke and toxicity meet or exceed Boeing and Airbus requirements.

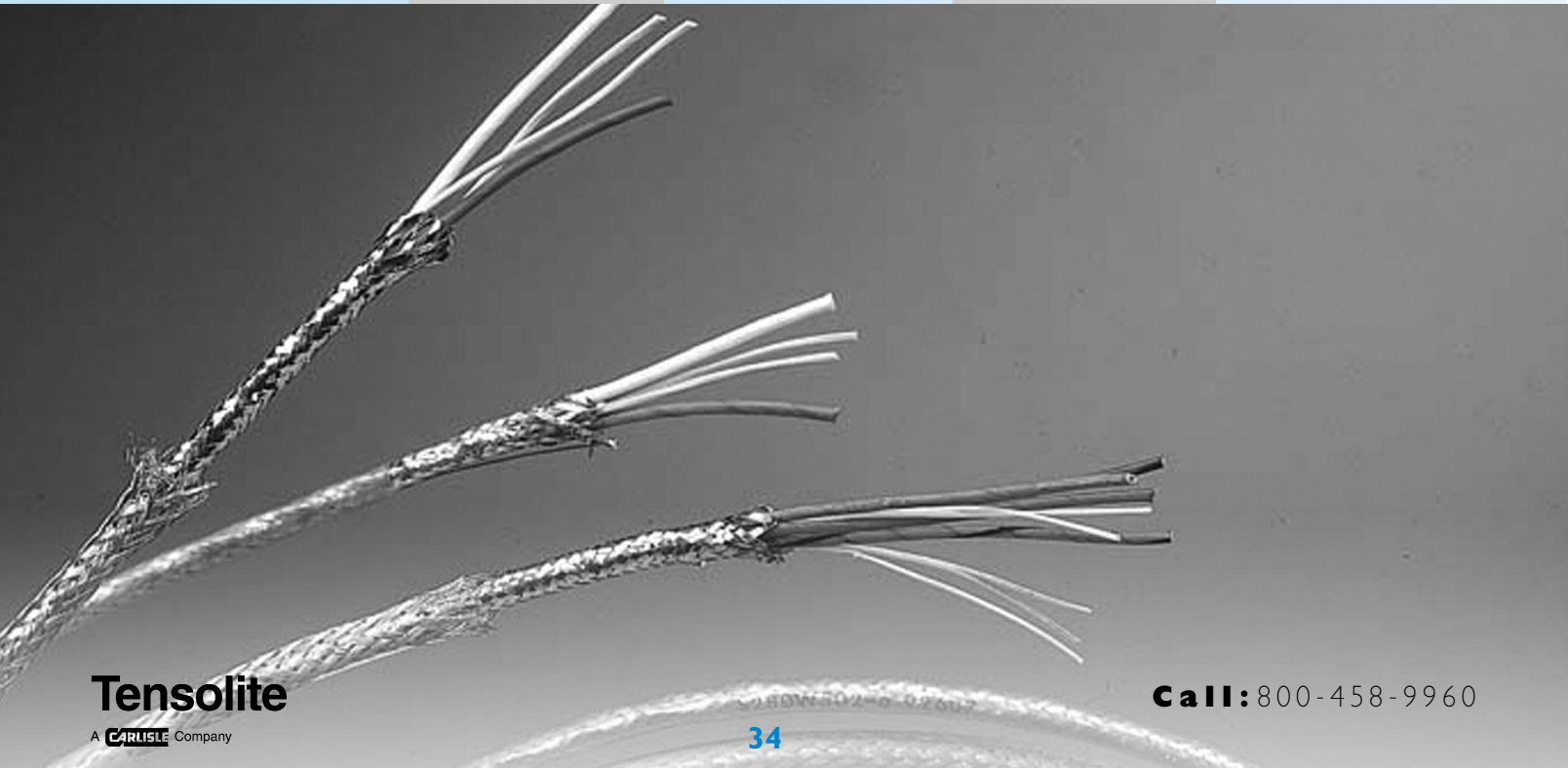
SCCA – Silver Coated Copper Alloy

TCC – Tin Coated Copper

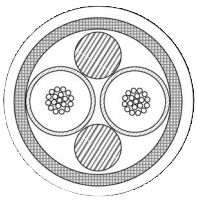
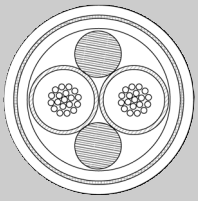
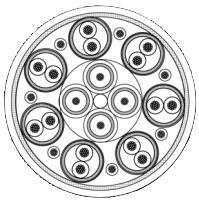
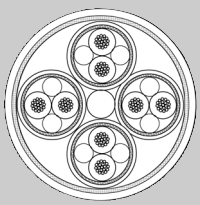
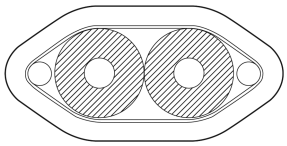
NETflight™ Specialty

Aerospace Grade Data Bus Cables

				
Part Number:	**28433/02171LX-4**	**24450/03089X-4(LD)**	**24483/03063LX-6(LD)**	**24463/9P025X-2(LD)**
Typical Protocol	USB 2.0	IEEE 1394a	IEEE 1394a	ARINC 629
AWG Size(19 Strand):	28 / 28	24	24 / 22	24
Conductor Material:	SCCA	SCC	SCCA / SCC	SCCA
Conductor Diameter(in):	0.0189	0.0255	0.0233 / .0295	0.0233
Insulation Material:	PTFE	PTFE	PTFE	PTFE
Insulation Diameter(in):	0.033	0.052	0.065 / .0415	0.054
Pair #1:	White, Green	White/Red, White/Green	White/Red, White/Green	White, Blue
Pair #2:		White/Orange, White/Blue	White/Orange, White/Blue	
Power:	Red, Black		White, Black	
Cable Diameter(in):	0.140	0.190	0.340	0.150
Cable Weight(lbs/1000 ft):	15.4	35	78	19
Impedance(Ω)	90 ± 13	110 ± 6	110 ± 6	100 ± 5.5
Capacitance(pF/ft):	16	12	12	13
Velocity of Propagation:	69%	79%	79%	79%
Attenuation(dB/100 ft):	14 @ 100MHz	6.5 @ 100MHz	11 @ 200 MHz	2.0 @ 10MHz
	24 @ 200MHz	10 @ 200MHz	17 @ 400MHz	6.6 @ 100MHz
	36 @ 400MHz	16 @ 400MHz	23 @ 800MHz	



NETflight™ Specialty

				
24473/9M184X-2(LD)	**CAN24TST120**	**NF28DVI-I**	**24473/05099X-8(LD)**	**26460/0606/X-2**
CEPT-E1	CANbus	DVI-I	Modified DVI-D	SERIAL ATA
24	24	28 / 30 (7 strand)	24	26
SCCA	SCCA	SCC / SCCCS	SCCA	SCC
0.0233	0.0233	.0154 / .0120	0.0233	0.0159
PTFE	PTFE	Fluoropolymer	PTFE	PTFE
0.070	0.054	.042 / .055	0.055	0.048
White, Brown	White, Blue			
0.175	0.142	0.450	0.400	0.072 X 0.145
20.8	13.5	126	105	
125 ± 10	120 ± 12	100 / 75	100	100 ± 5
12	12	14.5 / 19.5	13	15
79%	79%	69%	78%	69%
	1.0 @ 1MHz			24.4 @ 750 MHz
	2.0 @ 6MHz			37.0 @ 1500 MHz
	2.7 @ 10MHz			

NETflight™ Optical

Aerospace Grade Optical Fiber Cables (Simplex)

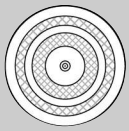
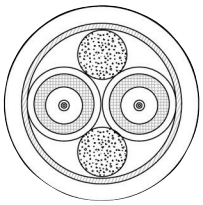
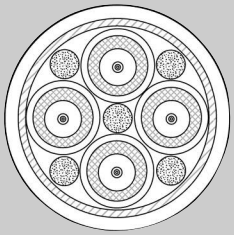
100°C Temperature Rating	NFO-125-1	NFO-125-3	NFO-125-5
Core	62.5/125 multi-mode	50/125 multi-mode	9/125 single mode
Cladding	glass	glass	glass
Primary Buffer Material	Polyacrylate	Polyacrylate	Polyacrylate
Primary Buffer Diameter	245 µ m	245 µ m	245 µ m
Secondary Buffer Material	PTFE/Polyimide	PTFE/Polyimide	PTFE/Polyimide
Secondary Buffer Diameter	915 µ m	915 µ m	915 µ m
Strength Member	aramid/glass	aramid/glass	aramid/glass
Jacket	Fluoropolymer	Fluoropolymer	Fluoropolymer
Nominal Cable Diameter	1.88mm	1.88mm	1.88mm
Nominal Cable Weight	4.65kg/km	4.65kg/km	4.65kg/km
Flammability per BMS 13-71	Pass	Pass	Pass
Smoke Generation per BMS 13-71	Pass	Pass	Pass
Toxicity per BMS 13-71	Pass	Pass	Pass

150°C Temperature Rating	NFO-150-1*	NFO-150-3	NFO-150-5
Core	62.5/125 multi-mode	50/125 multi-mode	9/125 single mode
Cladding	glass	glass	glass
Primary Buffer Material	High Temp Acrylate	High Temp Acrylate	High Temp Acrylate
Primary Buffer Diameter	245 µ m	245 µ m	245 µ m
Secondary Buffer Material	PTFE/Polyimide	PTFE/Polyimide	PTFE/Polyimide
Secondary Buffer Diameter	915 µ m	915 µ m	915 µ m
Strength Member	aramid/glass	aramid/glass	aramid/glass
Jacket	Fluoropolymer	Fluoropolymer	Fluoropolymer
Nominal Cable Diameter	1.88mm	1.88mm	1.88mm
Nominal Cable Weight	4.65kg/km	4.65kg/km	4.65kg/km

**Meets requirements of EN4146-002*

NETflight™ Optical

Aerospace Grade Ruggedized Optical Fiber Cable

	 Single	 Duplex	 Quad.
P/N:	**NFO-XXX-X-1**	**NFO-XXX-X-2**	**NFO-XXX-X-4**
Component:	Any Simplex Cable can be utilized in any Ruggedized Fiber Optic Cable constructions		
Binder Material:	Fiberglass Braid	Fluoropolymer	Fluoropolymer
Jacket Material:	Fluoropolymer	Fluoropolymer	Fluoropolymer
Nominal Cable Diameter:	2.74mm	4.95mm	5.72mm
Nominal Cable Weight:	10.7kg/km	26.5kg/km	40kg/km
Flammability per FAR 25 Appendix F	Pass	Pass	Pass

Acculite® Balanced Line

Tensolite's family of differential balanced line cables provides a solution to the market demands imposed as a result of the ever increasing bandwidth and higher frequencies required by the latest high data rate applications. By utilizing a variety of dielectrics, shielding options, and cable configurations, Tensolite has developed a product offering that provides the best cost-to-performance in the industry.

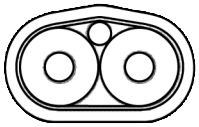
Options

- Conductor/Drain Material: SPC — Silver-plated Copper
- Other materials for conductor, dielectric, shield and jacket are available upon request.
- Other dielectric options, i.e. solid or cellular, extruded or wrapped, are available upon request.
- Other shield options are available upon request.

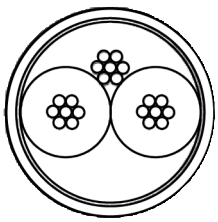
Part Numbering Guide

Cable Construction	Conductor Stranding	Conductor AWG Size	Cable Type		Cable Configuration	Impedance
BL	**7**	**26**	**HT**	**–**	**P**	**100**
Balanced Line			HT = Extruded Expanded PTFE Dielectric Foil Shield Black FEP Jacket		P = Parallel Pair	
			LT = Extruded Foamed Polyolefin Dielectric Foil Shield Gray PVC Jacket		T = Twisted Pair	

	BL726HT- P100	BL126HT- P100	BL726HT- T100	BL728HT- P100	BL128HT- P100	BL128LT- P100	BL730HT- P100	BL130HT- P100
Physical Traits								
Conductor AWG	26	26	26	28	28	28	30	30
Conductor Stranding	7 x 34	Solid	7 x 34	7 x 36	Solid	Solid	7 x 38	Solid
Conductor Material	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
Conductor Diameter (inch)	0.019	0.016	0.019	0.015	0.0126	0.0126	0.012	0.010
Dielectric Diameter (inch)	0.045	0.040	0.045	0.035	0.031	0.035	0.029	0.025
Drain Wire AWG	30	28	26	28	28	28	30	30
Drain Wire Stranding	7 x 38	Solid	7 x 34	7 x 36	Solid	Solid	7 x 38	Solid
Drain Wire Material	SPC	SPC	SPC	SPC	SPC	SPC	SPC	SPC
Shield Diameter (inch)	.051 x .092	.049 x .082	.092	.047 x .072	.041 x .064	.044 x .072	.038 x .060	.033 x .052
Jacket Diameter (inch)	.063 x .105	.061 x .095	.105	.060 x .086	.058 x .081	.060 x .088	.055 x .077	.050 x .069
Electrical Traits								
Impedance (ohms)	100	100	100	100	100	100	100	100
Capacitance (pF/ft)	12	12	12	12	12	13	12	12
Velocity of Propagation (%)	85	85	85	85	85	77	85	85
Conductor DC Resistance (ohms/1,000')	38	40	38	60	64	64	93	102
Attenuation (dB/100')								
@ 100 MHz	10	11	11	13	14	12	16	18
@ 400 MHz	20	22	23	26	28	24	32	36



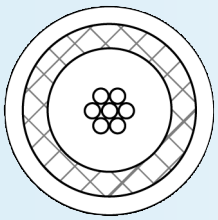
Parallel Pair



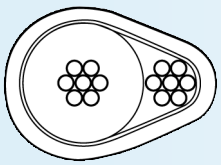
Twisted Pair

Acculite® Coaxial

Tensolite produces many different versions of coaxial cable by utilizing combinations of primary dielectric and shielding configurations. The ACCULITE® system provides Tensolite with the ability to develop a wide range of coaxial constructions to fit applications requiring small, flexible cables with highly engineered electrical properties.



Braid



Foil Drain

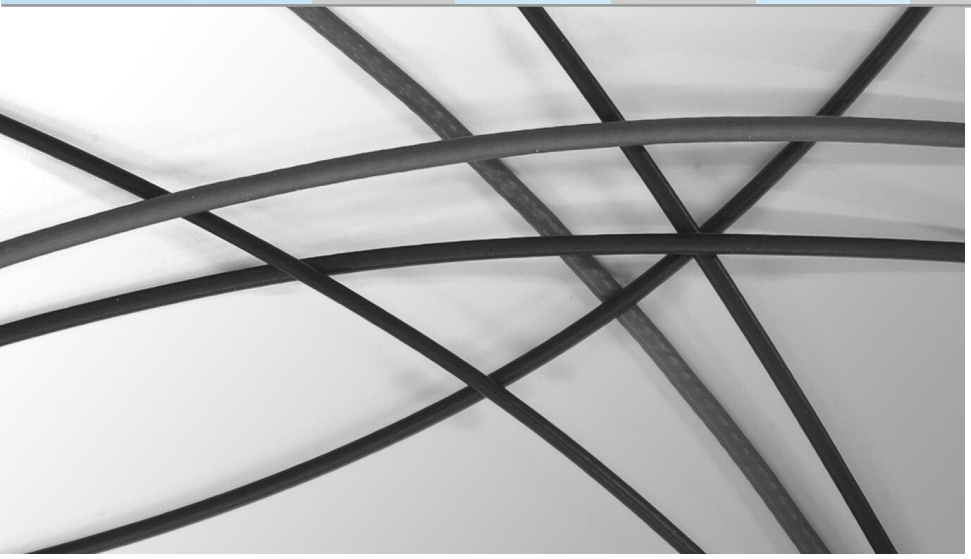
Options

- Conductor/ Braid Material: SPC — Silver-plated Copper
  TPC — Tin-plated Copper
  SPCA — Silver-plated Copper Alloy
- Other materials for conductor, dielectric, shield and jacket are also available upon request.
- Other dielectric options, i.e. solid or cellular, extruded or wrapped, are also available upon request.
- Other shield options are also available upon request.

Part Numbering Guide

Cable Construction	Conductor & Drain Stranding (if Foil Shield)	Conductor & Drain AWG Size (if Foil Shield)	Cable Type		Shield Type	Impedance
C	**7**	**26**	**HT**	**–**	**B**	**50**
Coax			HT = Extruded Expanded PTFE Dielectric SPC Shield (if Braid) Black FEP Jacket		B = Braided	
			LT = Extruded Foamed Polyolefin Dielectric TPC Shield (if Braid) Gray PVC Jacket		F = Foil with Drain (Drain Same Size as Conductor)	

	C726HT- F50	C726HT- B50	C728HT- F50	C730HT- F50	C730LT- B75	C132HT- B93	C133LT- F93	C734HT- B93
Physical Traits								
Conductor AWG	26	26	28	30	30	32	33	34
Conductor Stranding	7 x 34	7 x 34	7 x 36	7 x 38	7 x 38	Solid	Solid	7 x 42
Conductor Material	SPC	SPC	SPC	SPC	TPC	SPC	SPC	SPCA
Conductor Diameter (inch)	.019	.019	.015	.012	.012	.008	.0073	.0093
Dielectric Diameter (inch)	.044	.046	.035	.027	.055	.049	.046	.046
Shield Type	Foil	Braid	Foil	Foil	Braid	Braid	Foil	Braid
Shield Diameter (inch)	.047 x .064	.064	.038 x .052	.030 x .040	.073	.062	.038 x .052	.060
Jacket Diameter (inch)	.059 x .075	.076	.052 x .065	.044 x .053	.087	.076	.052x.065	.074
Electrical Traits								
Impedance (ohms)	50	50	50	50	75	93	93	93
Capacitance (pF/ ft)	24	24	24	24	18	13	14	13
Velocity of Propagation (%)	85	85	85	85	77	85	77	85
Conductor DC Resistance (ohms/1,000')	38	38	60	93	98	160	185	270
Attenuation (dB/100')								
@ 100 MHz	14	9	17	22	8	9	14	10
@ 400 MHz	32	19	35	49	16	19	34	21



Acculite® UT

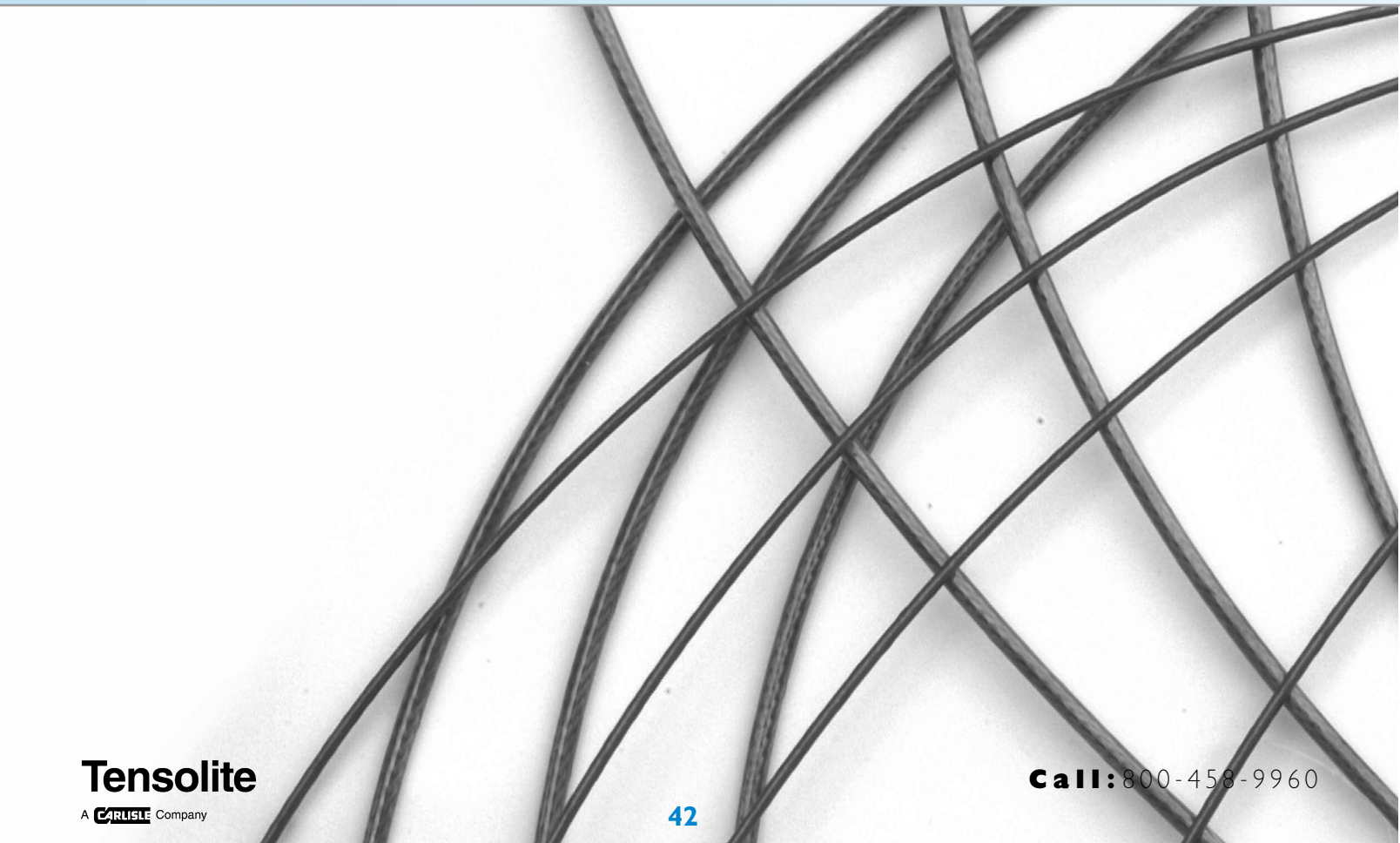
Ultra-Thin

Miniaturized, lightweight PTFE insulated lead wire

Tensolite ACCULITE® UT wire is a series of lightweight, smaller diameter lead wire for applications requiring thinner wall thickness and smaller conductor sizes.

Applications

- Subminiature Thermocouple leads
- Test Equipment Wiring
- Miniature slip ring and gyroscope
- Miniature brush block assemblies
- Strain gauge and transducer leads
- Medical Equipment
- Tone arm and hearing aid wire
- Micro component interconnect wiring
- Radio and Television circuitry
- Telemetering equipment
- Aerospace and Missile instrumentation



Product Code	AWG Silver Plated Copper	Dielectric Material	Nominal wall Thickness	Finished Diameter Min/Max	Max D.C. Resistance Ohms/ 1000ft. @ 20 °C	Nominal Weight/ (lbs/1000ft)
S26UT	26 (1/26)	PTFE	0.0040	0.022 / 0.025	42.1	1.000
S28UT	28 (1/28)	PTFE	0.0035	0.018 / 0.021	66.4	0.650
S736UT	28 (7/36)	PTFE	0.0040	0.021 / 0.025	62.0	0.768
S30UT	30 (1/30)	PTFE	0.0030	0.015 / 0.017	102.0	0.430
S738UT	30 (7/38)	PTFE	0.0040	0.018 / 0.022	97.8	0.573
S740UT	32 (7/40)	PTFE	0.0040	0.015 / 0.020	166.0	0.379
S742UT	34 (7/42)	PTFE	0.0035	0.014 / 0.016	258.0	0.261
S744UT *	36 (7/44)	PTFE	0.0035	0.012 / 0.015	630.0	0.200

**Manufactured with silver-plated copper alloy conductor*

Performance

- Operating Voltage: 100 Vrms, 60 Hz, or 300 Vdc, Max.
- Operating Temperature: -90 °C to 200 °C
- Colors Available: Black, Brown, Red, Orange, Yellow, Green, Blue, Violet, Gray, White
- RoHS Compliant

Acculite® Specialty Construction

Coaxial & Twisted Pairs Cables

Tensolite provides extensive engineering support to assist your project team in designing and manufacturing speciality cables. We specialize in custom designed, precision engineered cables to fit the toughest design criteria.

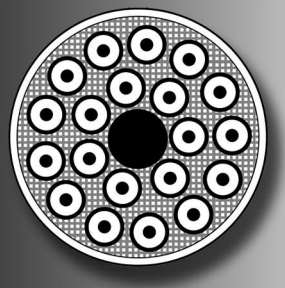
Our design team knows that many applications require hybrid constructions in order to meet stringent packaging requirements. We work closely with end users to develop prototype samples for design verification. Tensolite has produced multiconductor cables and special constructions designed to address the following:

- Interprocessor Connection
- Precision Clock Line coaxial cables for critical timing applications
- High Density I/O applications
- Multiconductor Twisted Pair Cables for systems requiring low skew between signal lines
- Analog Read/Write Channel cables
- Reduced Diameter multiconductor applications

The following product tables list some of our capabilities in custom engineered cables. These tables are not all inclusive, representing only a fraction of the possibilities available. "Standard" construction does not apply since the majority of the cables we manufacture are One-of-a-Kind.

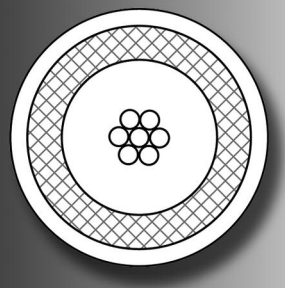
Multiconductor Coaxial Cables

- Component Counts from 4 coaxes to 44 individual coaxes
- Dielectric materials: PTFE or Polyolefins
- Braided shields and Aluminum/Polyester drain wire configurations available
- Combinations of Braid and Aluminum/Polyester shields available to provide improved EMI/RFI Performance.



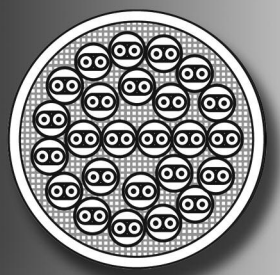
Precision Miniature Coaxial Cables

- Conductor sizes range from 28 to 34 AWG
- PTFE Dielectric
- Extremely tight electrical and mechanical tolerances
- Stable impedance and minimal skew designs available



Multiconductor Twisted Pair Cables

- Conductor counts range from 2 through 26 pair
- Dielectric materials: PTFE or Polyolefins
- Minimal skew designs available producing low line-to-line skew



Custom Cable Specifier

This page can also be completed on Tensolite's web site, www.tensolite.com

Customer Name: _____ Date: _____

Company: _____ Tensolite Rep: _____

Address: _____ Ph #: _____

Ph # : _____ Fax #: _____ Fax #: _____

E-Mail: _____ E-Mail: _____

Sample Quantity Needed: _____ Date Samples Needed: _____ Date Quote Needed: _____

Annual Production Qty: _____ Date Production Starts: _____

Price per foot desired: _____ Budgetary or Funded Project: _____

BALANCED LINE

Electrical Characteristics

Impedance (ohms)			
Signal Speed/Data Rate			
Operating Frequency			
Attenuation			
Dielectric Constant			
Velocity of Propagation			
Cross Talk			
Skew Delay (within pair)			
Skew Delay (between pair)			

Mechanical Characteristics

Conductor Gauge Size			
Conductor Material			
Conductor Construction			
Dielectric Material			
Dielectric Construction			
Shielding Type			
Jacket Material			
Temperature Rating			
Classifications Needed			
Maximum Cable OD			

Composite Cables

No. of Conductors	AWG	No. of Twisted Pairs	AWG	No. of Coaxial Cables	Part No.

AFTERMARKET SERVICES

WIRE & CABLE GUIDE

CARLISLE
INTERCONNECT TECHNOLOGIES

Leading the Industry Through Innovation

Carlisle Interconnect Technologies (CarlisleIT) is one of the world's leading designers and manufacturers of high-performance interconnect solutions. With our broad cable offerings from Optical Fiber to ruggedized hook-up wire, CarlisleIT is sure to have a solution to meet any need. For over 70 years, CarlisleIT has been delivering highly reliable products to Aerospace, Defense, Medical, Industrial and other markets.

Originally founded as the Tensolite Company in 1940, CarlisleIT has grown dramatically and now encompasses many recognized brands, including ECS, Raydex and Thermax. CarlisleIT's commitment to innovation, global manufacturing and continuous improvement through the Carlisle Operating System (COS) makes us ideally suited to support your most demanding programs and applications.

Table of Contents

Part Number Guide

Below is a typical BMS part number format. Example part number: BMS13-60 T07 C01 G020

BMS13-XX TXX CXX GXXX

Wire Size (AWG)
Choose a number between the minimum and maximum provided in the charts

Class (Number of Conductors)
Choose a number between the minimum and maximum provided in the charts

Type

BMS Specification

BMS 13-48	BMS 13-65	BMS 13-78
BMS 13-55	BMS 13-67	BMS 13-80
BMS-13-58	BMS 13-71	BMS 13-83
BMS 13-60	BMS 13-72	

* Product Specifications are subject to change without notice. Specification information is provided for reference only.

BMS 13-60

Arc resistant, 600V, annealed copper, copper alloy and aluminum wire and cable.

TYPE	CLASS		WIRE SIZE (AWG)		INSULATION THICKNESS (MIL)	CONDUCTOR		SHIELD		JACKET	TEMPERATURE RATING (DEGREES C)	
	MIN	MAX	MIN	MAX		MATERIAL	COATING	MATERIAL	COATING	MATERIAL	MIN	MAX
1	1	8	22	4/0	8	Annealed Copper	Tin	--	--	--	-65	150
2	1	4	22	10	8	Annealed Copper	Tin	Copper Braid	Tin	Polyimide/ PTFE	-65	150
3	2	4	22	10	8	Annealed Copper	Tin	--	--	Polyimide/ PTFE	-65	150
4	1	8	24	16	8	High Strength Copper Alloy	Nickel	--	--	--	-65	260
5	1	4	24	16	8	High Strength Copper Alloy	Nickel	Copper Braid	Tin	Polyimide/ PTFE	-65	150
			14	10	8	Annealed Copper						
6	2	4	24	16	8	High Strength Copper Alloy	Nickel	--	--	Polyimide/ PTFE	-65	260
7	1	8	22	4/0	19	Annealed Copper	Nickel	--	--	--	-65	260
8	1	6	22	10	19	Annealed Copper	Nickel	Copper Braid	Nickel	Polyimide/ PTFE	-65	260
9	2	4	22	10	19	Annealed Copper	Nickel	--	--	Polyimide/ PTFE	-65	260
	5	8	22	18								
10	1	8	24	16	19	High Strength Copper Alloy	Nickel	--	--	--	-65	260
11	1	6	24	16	19	High Strength Copper Alloy	Nickel	Copper Braid	Nickel	Polyimide/ PTFE	-65	260
12	2	4	24	16	19	High Strength Copper Alloy	Nickel	--	--	Polyimide/ PTFE	-65	260
13	1	6	22	10	6	Annealed Copper	Tin	Copper Braid	Tin	Polyimide/ PTFE	-65	150

BMS 13-60 (Continued)

Arc resistant, 600V, annealed copper, copper alloy and aluminum wire and cable.

TYPE	CLASS		WIRE SIZE (AWG)		INSULATION THICKNESS (MIL)	CONDUCTOR		SHIELD		JACKET	TEMPERATURE RATING (DEGREES C)	
	MIN	MAX	MIN	MAX		MATERIAL	COATING	MATERIAL	COATING	MATERIAL	MIN	MAX
14	2	6	22	10	6	Annealed Copper	Tin	--	--	Polyimide/ PTFE	-65	150
15	1	6	24	16	6	High Strength Copper Alloy	Nickel	Copper Braid	Tin	Polyimide/ PTFE	-65	150
			22	10	6	Annealed Copper						
16	2	6	24	16	6	High Strength Copper Alloy	Nickel	--	--	Polyimide/ PTFE	-65	260
17	1	6	22	10	6	Annealed Copper	Nickel	Copper Braid	Nickel	Polyimide/ PTFE	-65	260
18	2	6	22	10	6	Annealed Copper	Nickel	--	--	Polyimide/ PTFE	-65	260
19	1	8	22	4/0	8	Annealed Copper	Nickel	--	--	--	-65	260
20	1	5	22	10	8	Annealed Copper	Nickel	Copper Braid	Nickel	Polyimide/ PTFE	-65	260
21	2	4	22	10	8	Annealed Copper	Nickel	--	--	Polyimide/ PTFE	-65	260
22	1	3	8	4/0	19	EC Aluminum	--	--	--	--	-65	175
23	10	10	18	18	8	High Strength Copper Alloy	Nickel	--	--	Polyimide/ PTFE	-65	260
24	7	7	20	20	8	Annealed Copper	Tin	Copper Braid	Nickel	Polyimide/ PTFE	-65	150
25	1	4	24	16	8	High Strength Copper Alloy	Nickel	Double Copper Braid	Nickel	Polyimide/ PTFE	-65	260
26	1	3	24	16	8	High Strength Copper Alloy	Nickel	Double Flat Copper Braid	Tin	Polyimide/ PTFE	-65	150
27	1	3	22	16	8	High Strength Copper Alloy	Nickel	Double Copper Braid	Nickel	Polyimide/ PTFE	-65	260
28	1	8	22	10	6	Annealed Copper	Tin	--	--	--	-65	150
29	1	8	22	10	6	Annealed Copper	Nickel	--	--	--	-65	260
30	1	8	24	16	6	High Strength Copper Alloy	Nickel	--	--	--	-65	260
31	1	6	22	16	6	Annealed Copper	Tin	Flat Copper Braid	Tin	Polyimide/ PTFE	-65	150
32	1	6	24	16	6	High Strength Copper Alloy	Nickel	Flat Copper Braid	Tin	Polyimide/ PTFE	-65	150
33	1	6	22	16	8	High Strength Copper Alloy	Tin	Flat Copper Braid	Tin	Polyimide/ PTFE	-65	150
34	1	6	24	16	8	High Strength Copper Alloy	Nickel	Flat Copper Braid	Tin	Polyimide/ PTFE	-65	150
35	1	8	26	16	6	High Strength Copper Alloy	Silver	--	--	--	-65	200
36	1	6	26	16	6	High Strength Copper Alloy	Silver	Flat Copper	Silver	Polyimide/ PTFE	-65	200
37	1	6	26	16	6	High Strength Copper Alloy	Nickel	Flat Copper	Silver	Polyimide/ PTFE	-65	200

BMS 13-60 (Continued)

Arc resistant, 600V, annealed copper, copper alloy and aluminum wire and cable.

TYPE	CLASS		WIRE SIZE (AWG)		INSULATION THICKNESS (MIL)	CONDUCTOR		SHIELD		JACKET	TEMPERATURE RATING (DEGREES C)	
	MIN	MAX	MIN	MAX		MATERIAL	COATING	MATERIAL	COATING	MATERIAL	MIN	MAX
38	1	6	22	10	6	Annealed Copper	Nickel	Flat Copper	Silver	Polyimide/ PTFE	-65	200
39	1	8	26	12	8	High Strength Copper Alloy	Silver	--	--	--	-65	200
40	1	6	26	16	8	High Strength Copper Alloy	Silver	Flat Copper	Silver	Polyimide/ PTFE	-65	200
41	1	6	24	16	8	High Strength Copper Alloy	Nickel	Flat Copper	Silver	Polyimide/ PTFE	-65	200
42	1	6	22	10	8	Annealed Copper	Nickel	Flat Copper	Silver	Polyimide/ PTFE	-65	200
43	1	6	22	10	19	Annealed Copper	Nickel	Flat Copper	Silver	Polyimide/ PTFE	-65	200
44	1	4	22	16	10	Annealed Copper	Nickel	--	--	--	-65	260
45	1	4	24	10	10	High Strength Copper Alloy	Nickel	--	--	--	-65	260
46	1	4	24	16	8	High Strength Copper Alloy	Nickel	Copper Braid	Nickel	Polyimide/ PTFE	-65	260
47	1	4	20	10	8	Annealed Copper	Nickel	Copper Braid	Nickel	Polyimide/ PTFE	-65	260
48	1	4	24	16	6	High Strength Copper Alloy	Nickel	Double Copper Braid	Nickel	Polyimide/ PTFE	-65	260
49	1	4	22	10	6	Annealed Copper	Nickel	Double Copper Braid	Nickel	Polyimide/ PTFE	-65	260
50	1	4	26	16	6	High Strength Copper Alloy	Nickel	Copper Braid	Nickel	Polyimide/ PTFE	-65	260
51	1	4	26	16	6	High Strength Copper Alloy	Nickel	Flat Copper	Nickel	Polyimide/ PTFE	-65	260
52	1	4	22	10	6	Annealed Copper	Nickel	Flat Copper	Nickel	Polyimide/ PTFE	-65	260
53	1	3	22	16	6	High Strength Copper Alloy	Nickel	Double Copper Braid	Nickel	Polyimide/ PTFE	-65	260
54	1	4	22	10	18	Annealed Copper	Nickel	Double Copper Braid	Nickel	Polyimide/ PTFE	-65	260

Standard jacket color: White. (Except type 01 and 22 AWG = pastel green). Multi-color standard colors = Red, blue, yellow, green, black, purple, orange, brown (except type 23).

BMS 13-48

Extruded cross-linked ETFE, 600V, wire and cable. “General Purpose” for use in both pressurized and unpressurized areas of aircraft.

TYPE	CLASS		WIRE SIZE (AWG)		INSULATION THICKNESS (MIL)	CONDUCTOR		SHIELD		JACKET	TEMPERATURE RATING (DEGREES C)	
	MIN	MAX	MIN	MAX		MATERIAL	COATING	MATERIAL	COATING	MATERIAL	MIN	MAX
1	1	5	24	10	6	Annealed Copper	Tin	--	--	--	-65	150
2	1	5	24	16	6	High Strength Copper Alloy	Nickel	--	--	--	-65	150
3	1	5	24	10	6	Annealed Copper	Tin	Copper	Tin	ETFE	-65	150
4	2	5	24	12	6	Annealed Copper	Tin	--	--	ETFE	-65	150
5	1	5	24	16	6	High Strength Copper Alloy	Silver	--	--	--	-65	150
6	1	5	24	16	6	High Strength Copper Alloy	Silver	Copper	Tin	ETFE	-65	150
7	2	5	24	16	6	High Strength Copper Alloy	Silver	--	--	ETFE	-65	150
8	1	6	24	4/0	10	Annealed Copper	Tin	--	--	--	-65	150
9	1	6	24	16	10	High Strength Copper Alloy	Silver	--	--	--	-65	150
10	1	7	24	4/0	8	Annealed Copper	Tin	--	--	--	-65	150
11	1	6	24	16	8	High Strength Copper Alloy	Silver	--	--	--	-65	150
12	1	4	24	8	8	Annealed Copper	Tin	Copper	Tin	ETFE	-65	150
13	1	6	24	16	8	High Strength Copper Alloy	Silver	Copper	Tin	ETFE	-65	150
14	2	5	24	12	8	Annealed Copper	Tin	--	--	ETFE	-65	150
15	1	4	24	12	10	Annealed Copper	Tin	Copper	Tin	ETFE	-65	150
16	1	6	24	10	15	Annealed Copper	Tin	--	--	--	-65	150
17	2	5	20	12	15	Annealed Copper	Tin	--	--	ETFE	-65	150
18	1	4	20	12	15	Annealed Copper	Tin	Copper	Tin	ETFE	-65	150
19	1	6	24	16	15	High Strength Copper Alloy	Silver	--	--	--	-65	150
20	2	5	20	18	15	High Strength Copper Alloy	Silver	--	--	ETFE	-65	150
21	1	4	20	18	15	High Strength Copper Alloy	Silver	Copper	Tin	ETFE	-65	150
22	1	6	24	16	15	High Strength Copper Alloy	Nickel	--	--	--	-65	150
23	1	6	24	16	10	High Strength Copper Alloy	Nickel	--	--	--	-65	150
24	1	4	24	16	10	High Strength Copper Alloy	Nickel	Copper	Tin	ETFE	-65	150
25	1	5	24	12	6	Annealed Copper	Tin	Flat Copper	Tin	ETFE	-65	150
26	1	5	24	16	6	High Strength Copper Alloy	Nickel	Flat Copper	Tin	ETFE	-65	150
27	1	4	24	12	8	Annealed Copper	Tin	Flat Copper	Tin	ETFE	-65	150
28	1	5	24	16	8	High Strength Copper Alloy	Silver	Flat Copper	Tin	ETFE	-65	150

BMS 13-48 (Continued)

Extruded cross-linked ETFE, 600V, wire and cable. "General Purpose" for use in both pressurized and unpressurized areas of aircraft.

TYPE	CLASS		WIRE SIZE (AWG)		INSULATION THICKNESS (MIL)	CONDUCTOR		SHIELD		JACKET	TEMPERATURE RATING (DEGREES C)	
	MIN	MAX	MIN	MAX		MATERIAL	COATING	MATERIAL	COATING	MATERIAL	MIN	MAX
29	1	5	24	16	6	High Strength Copper Alloy	Nickel	Copper	Tin	ETFE	-65	150
30	2	5	24	16	6	Annealed Copper	Nickel	--	--	ETFE	-65	150
31	1	6	24	16	8	High Strength Copper Alloy	Nickel	--	--	--	-65	150
32	1	6	24	16	8	High Strength Copper Alloy	Nickel	Copper	Tin	ETFE	-65	150
33	2	5	20	18	15	High Strength Copper Alloy	Nickel	--	--	ETFE	-65	150
34	1	4	20	18	15	High Strength Copper Alloy	Nickel	Copper	Tin	ETFE	-65	150
35	1	6	24	12	8	Annealed Copper	Silver	--	--	--	-65	150
36	1	6	24	12	8	Annealed Copper	Silver	Copper	Tin	ETFE	-65	150
37	1	4	24	16	8	High Strength Copper Alloy	Nickel	Double Copper Braid	Tin	ETFE	-65	150
38	1	4	22	10	8	Annealed Copper	Tin	Double Copper Braid	Tin	ETFE	-65	150
39	1	4	24	16	8	High Strength Copper Alloy	Nickel	Flat Copper	Tin	ETFE	-65	150
40	1	5	22	10	6	Annealed Copper	Tin	Copper	Nickel	ETFE	-65	150
41	1	5	24	16	6	High Strength Copper Alloy	Silver	Copper	Nickel	ETFE	-65	150
42	1	6	22	8	8	Annealed Copper	Tin	Copper	Nickel	ETFE	-65	150
43	1	6	24	8	8	High Strength Copper Alloy	Silver	Copper	Nickel	ETFE	-65	150
44	1	4	22	10	10	Annealed Copper	Tin	Copper	Nickel	ETFE	-65	150
45	1	4	20	12	15	Annealed Copper	Tin	Copper	Nickel	ETFE	-65	150
46	1	4	20	18	15	High Strength Copper Alloy	Silver	Copper	Nickel	ETFE	-65	150
47	1	4	24	16	10	High Strength Copper Alloy	Nickel	Copper	Nickel	ETFE	-65	150
48	1	5	22	12	6	Annealed Copper	Tin	Flat Copper	Nickel	ETFE	-65	150
49	1	5	24	16	6	High Strength Copper Alloy	Nickel	Flat Copper	Nickel	ETFE	-65	150
50	1	4	22	12	8	Annealed Copper	Tin	Flat Copper	Nickel	ETFE	-65	150
51	1	5	24	16	8	High Strength Copper Alloy	Silver	Flat Copper	Nickel	ETFE	-65	150
52	1	5	24	16	6	High Strength Copper Alloy	Nickel	Copper	Nickel	ETFE	-65	150
53	1	6	24	16	8	High Strength Copper Alloy	Nickel	Copper	Nickel	ETFE	-65	150
54	1	4	20	18	15	High Strength Copper Alloy	Nickel	Copper	Nickel	ETFE	-65	150
55	1	6	22	12	8	Annealed Copper	Silver	Copper	Nickel	ETFE	-65	150

BMS 13-48 (Continued)

Extruded cross-linked ETFE, 600V, wire and cable. "General Purpose" for use in both pressurized and unpressurized areas of aircraft.

TYPE	CLASS		WIRE SIZE (AWG)		INSULATION THICKNESS (MIL)	CONDUCTOR		SHIELD		JACKET	TEMPERATURE RATING (DEGREES C)	
	MIN	MAX	MIN	MAX		MATERIAL	COATING	MATERIAL	COATING	MATERIAL	MIN	MAX
56	1	4	24	16	8	High Strength Copper Alloy	Nickel	Copper	Nickel	ETFE	-65	150
57	1	4	22	10	8	Annealed Copper	Tin	Copper	Nickel	ETFE	-65	150
								Copper	Nickel			
58	1	5	24	16	8	High Strength Copper Alloy	Nickel	Copper	Nickel	ETFE	-65	150
59	1	7	22	4/0	8	Annealed Copper	Nickel	-	-	-	-65	150
60	1	5	22	10	8	Annealed Copper	Nickel	Flat Copper	Nickel	ETFE	-65	150
61	1	6	22	8	8	Annealed Copper	Nickel	Copper	Nickel	ETFE	-65	150
62	1	4	22	10	8	Annealed Copper	Nickel	Copper	Nickel	ETFE	-65	150
								Copper	Nickel			
63	1	4	22	10	8	Annealed Copper	Nickel	Copper	Nickel	ETFE	-65	150
								Copper	Nickel	ETFE		
64	1	4	24	22	8	High Strength Copper Alloy	Nickel	Copper	Nickel	ETFE	-65	150
								Copper	Nickel	ETFE		
65	1	6	24	22	15	Annealed Copper	Nickel	- - -	- - -	- - -	-65	150

Standard jacket color: White. (Except type 08, and 10, 22 AWG = pastel green.) Multi-conductor standard colors = Red, blue, yellow, green, black, purple, orange.

BMS 13-55

Insulated thin wall fire resistant, high temperature, 600V, wire and cable.

TYPE	CLASS		WIRE SIZE (AWG)		INSULATION THICKNESS (MIL)	CONDUCTOR		SHIELD		JACKET	TEMPERATURE RATING (DEGREES C)	
	MIN	MAX	MIN	MAX		MATERIAL	COATING	MATERIAL	COATING	MATERIAL	MIN	MAX
1	1	4	22	10	25	Annealed Copper	Nickel	--	--	Inorganic Fiber PTFE Tape Braid	-65	260
2	1	4	22	10	25	High Strength Copper Alloy	Nickel	--	--	Inorganic Fiber PTFE Tape Braid	-65	260
3	1	4	22	14	25	Annealed Copper	Nickel	Copper Braid	Nickel	Inorganic Fiber PTFE Tape Braid	-65	260
4	1	4	22	10	25	High Strength Copper Alloy	Nickel	Copper Braid	Nickel	Inorganic Fiber PTFE Tape Braid	-65	260
5	1	1	22	10	35	High Strength Copper Alloy	Nickel	--	--	Inorganic Fiber PTFE Tape Braid	-65	260
6	1	4	22	14	35	High Strength Copper Alloy	Nickel	Copper Braid	Nickel	Inorganic Fiber PTFE Tape Braid	-65	260

Standard jacket color: White with red stripe. Multi-conductor standard colors = Red, blue, yellow, green.

BMS 13-58

Extreme environment, nickel coated copper conductor, 600V, wire and cable. Intended for use in areas where exposure to thermal changes and corrosive fluids are normal.

TYPE	CLASS		WIRE SIZE (AWG)		INSULATION THICKNESS (MIL)	CONDUCTOR		SHIELD		JACKET	TEMPERATURE RATING (DEGREES C)	
	MIN	MAX	MIN	MAX		MATERIAL	COATING	MATERIAL	COATING	MATERIAL	MIN	MAX
1	1	8	24	4/0 8 12	22	Annealed Copper	Nickel	--	--	--	-65	260
2	1	4	24	12	22	Annealed Copper	Nickel	Copper Braid	Nickel	--	-65	260
3	1	4	24	12	22	Annealed Copper	Nickel	--	--	PTFE/Tape	-65	260
4	2	4	24	12	22	Annealed Copper	Nickel	--	--	PTFE/Tape	-65	260
5	1	8	24	12 16	22	High Strength Copper Alloy	Nickel	Copper Braid	Nickel	--	-65	260
6	1	4	24	16	22	High Strength Copper Alloy	Nickel	Copper Braid	Nickel	--	-65	260
7	1	4	24	16	22	High Strength Copper Alloy	Nickel	Copper Braid	Nickel	PTFE/Tape	-65	260
8	2	4	24	16	22	High Strength Copper Alloy	Nickel	--	--	PTFE/Tape	-65	260
9	1	3	24	18	22	High Strength Copper Alloy	Nickel	Copper Braid	Nickel	PTFE/Tape	-65	260

Standard jacket color: Light gray. Multi-conductor standard colors = Red, blue, yellow, green, black, purple, orange, brown, white.

BMS 13-65

Silver coated conductor, PTFE dielectric, double braid, Lightweight, 50 ohms,coax.

TYPE	IMPEDANCE	NOM O.D.	CENTER CONDUCTOR DIAMETER		INSULATION	CONDUCTOR		SHIELD		JACKET	TEMPERATURE RATING (DEGREES C)	
			MIN	MAX		MATERIAL	COATING	MATERIAL	COATING	MATERIAL	MIN	MAX
0E	50 ohm	0.111	0.023	0.024	PTFE	Annealed Copper	Silver	Round and Flat Copper	Silver	FEP	-55	200
0F	50 ohm	0.141	0.033	0.035	PTFE	Annealed Copper	Silver	Round and Flat Copper	Silver	FEP	-55	200
0G	50 ohm	0.187	0.047	0.049	PTFE	Annealed Copper	Silver	Round and Flat Copper	Silver	FEP	-55	200
0H	50 ohm	0.252	0.065	0.067	PTFE	Annealed Copper	Silver	Round and Flat Copper	Silver	FEP	-55	200
0J	50 ohm	0.322	0.088	0.090	PTFE	Annealed Copper	Silver	Round and Flat Copper	Silver	FEP	-55	200
0K	50 ohm	0.488	0.143	0.147	PTFE	Annealed Copper	Silver	Round and Flat Copper	Silver	FEP	-55	200

Standard jacket color: Brown.

BMS 13-67

Insulated fire resistant, high temperature wire and cable.

TYPE	CLASS		WIRE SIZE (AWG)		INSULATION	CONDUCTOR		SHIELD		JACKET	TEMPERATURE RATING (DEGREES C)	
	MIN	MAX	MIN	MAX		MATERIAL	COATING	MATERIAL	COATING	MATERIAL	MIN	MAX
1	--	--	--	--	--	--	--	--	--	--	--	--
2	1	4	22	10	Inorganic Fiber PTFE Tape & Braid	High Strength Copper Alloy	Nickel	Copper	Nickel	Inorganic Fiber PTFE Tape & Braid	-65	310

Standard jacket color: White with red stripe. Multi-conductor standard colors = Red, blue, yellow, green.

BMS 13-71

Aerospace grade optical fiber cable.

TYPE	CLASS	GRADE	OPTICAL FIBER		SECONDARY BUFFER	STRENGTH MEMBER	JACKET	TEMPERATURE RATING (DEGREES C)	
			DESCRIPTION	COATING		MATERIAL	MATERIAL	MIN	MAX
1	1	A	62.5/125/250 Multimode Fiber	Acrylate	Polyimide Tape over Expanded PTFE	Aramid Fiber/ Fiberglass Braid	PFA	-55	100
2	1	A	62.5/125/250 Multimode Fiber	Acrylate	Polyimide Tape over Expanded PTFE	--	--	-55	100
3	1	A	62.5/125/250 Multimode Fiber	Acrylate	Polyimide Tape over Expanded PTFE	Aramid Fiber/ Fiberglass Braid	PFA	-55	100
4	2	A	62.5/125/250 Multimode Fiber	Acrylate	Polyimide Tape over Expanded PTFE	Aramid Fiber/ Fiberglass Braid	PFA	-55	100

BMS 13-72

100 Ohm databus cable.

TYPE	CLASS	WIRE SIZE (AWG)	INSULATION	CONDUCTOR		SHIELD		JACKET	TEMPERATURE RATING (DEGREES C)	
				MATERIAL	COATING	MATERIAL	COATING	MATERIAL	MIN	MAX
3	4	24	PTFE	High Strength Copper Alloy	Silver	Flat and Round copper	Tin	FEP	-55	150
4	4	22	PTFE	High Strength Copper Alloy	Silver	Flat and Round copper	Tin	FEP	-55	150
7	2	24	PTFE	High Strength Copper Alloy	Silver	Flat and Round copper	Tin	FEP	-55	150
8	2	24	PTFE	High Strength Copper Alloy	Silver	Flat and Round copper	Tin	FEP	-55	150

BMS Wire & Cable

BMS 13-78

Arc resistant, 1500V, annealed copper and aluminum wire and cable.

TYPE	CLASS		WIRE SIZE (AWG)		INSULATION TYPE & THICKNESS (MIL)	CONDUCTOR		SHIELD		JACKET	TEMPERATURE RATING (DEGREES C)	
	MIN	MAX	MIN	MAX		MATERIAL	COATING	MATERIAL	COATING	MATERIAL	MIN	MAX
1	1	4	18	10	ETFE 25 mils	Annealed Copper	Nickel	--	--	--	-65	175
2	1	3	8	3/0	Flex-ETFE 33 mils	Annealed Copper - Fine Strand	Nickel	--	--	--	-65	175
3	1	3	8	4/0	Flex-ETFE 33 mils	Aluminum Fine Strand	--	--	--	--	-65	175
4	1	3	8	3/0	PTFE tape 33 mils	Annealed Copper - Fine Strand	Nickel	--	--	--	-65	260
5	1	4	18	10	ETFE 25 mils	Annealed Copper	Nickel	Copper Braid	Nickel	ETFE	-65	175
6	1	4	18	10	ETFE 25 mils	Annealed Copper	Nickel	Double Copper Braid	Nickel	ETFE	-65	175
7	1	3	18	10	PTFE tape 33 mils	Annealed Copper	Nickel	--	--	--	-65	260
8	1	4	18	12	PTFE tape 33 mils	Annealed Copper	Nickel	Copper Braid	Nickel	PTFE tape	-65	260
9	3	3	16	14	PTFE tape 33 mils	Annealed Copper	Nickel	Double Copper Braid	Nickel	PTFE tape	-65	260

BMS 13-80

Wire, electric, twinax, 120 Ohm, databus cable.

TYPE	CLASS	WIRE SIZE (AWG)		INSULATION	CONDUCTOR		SHIELD		JACKET
		MIN	MAX		MATERIAL	COATING	MATERIAL	COATING	MATERIAL
1	2	26	20	PTFE	High Strength Copper Alloy	Silver	Flat Copper	Tin	Polyimide/PTFE
2	2	26	20	PTFE	High Strength Copper Alloy	Silver	Flat Copper and Round Copper	Tin	Polyimide/PTFE

BMS 13-83

100 Ohm databus cable.

TYPE	CLASS	WIRE SIZE (AWG)	INSULATION	CONDUCTOR		SHIELD		JACKET	TEMPERATURE RATING (DEGREES C)	
				MATERIAL	COATING	MATERIAL	COATING	MATERIAL	MIN	MAX
3	4	24	PTFE	High Strength Copper Alloy	Silver	Flat and Round copper	Tin	Polyimide/PTFE	-55	150
4	4	22	PTFE	High Strength Copper Alloy	Silver	Flat and Round copper	Tin	Polyimide/PTFE	-55	150
7	2	24	PTFE	High Strength Copper Alloy	Silver	Flat and Round copper	Tin	Polyimide/PTFE	-55	150
8	2	24	PTFE	High Strength Copper Alloy	Silver	Flat and Round copper	Tin	Polyimide/PTFE	-55	150

S280W502

100 Ohm databus cable.

TYPE	CLASS	WIRE SIZE (AWG)	INSULATION	CONDUCTOR		SHIELD		JACKET
				MATERIAL	COATING	MATERIAL	COATING	MATERIAL
1	2	24	PTFE	High Strength Copper Alloy	Silver	Flat Copper and Round Copper	Tin	FEP
3	4	24	PTFE	Annealed Copper	Silver	Flat Copper and Round Copper	Tin	FEP
4	4	24	PTFE	High Strength Copper Alloy	Silver	Flat Copper and Round Copper	Tin	FEP
6	2	24	PTFE	High Strength Copper Alloy	Silver	Flat Copper	Tin	FEP

Hook-Up Wires - Airframe Wiring

Specifications			Construction		Wire Size (AWG)	Temperature Rating
ASN/ABS/NSA		EN				
REF.	Type	REF.				
ASN E0261	CF	2266	Conductor: Nickel Plated Copper (AWG 22 to 10), High Strength Nickel Plated Copper Alloy (AWG 26 & 24) Insulation: Polyimide Tapes + Topcoat Suitable for UV Laser Marking		26 to 10	200°C
ASN E0264	PF	2266	2 CF or EN 2266 Basic Cores Twisted Cable		26 to 10	200°C
ASN E0266	QF	2266	3 CF or EN 2266 Basic Cores Twisted Cable		26 to 10	200°C
ASN E0268	RF	2266	4 CF or EN 2266 Basic Cores Twisted Cable		26 to 10	200°C
ASN E0270	SJ	2713	1 CF or EN 2266 Basic Core + Suitable for UV Laser Marking	Shield: Nickel Plated Copper Spiral Shield Sheath: Polyimide Tapes + Topcoat	ASN 26 to 14 EN 26 to 10	200°C
ASN E0272	TK	2713	2 CF or EN 2266 Basic Cores + Suitable for UV Laser Marking	Shield: Nickel Plated Copper Spiral Shield Sheath: Polyimide Tapes + Topcoat	ASN 26 to 12 EN 26 to 10	200°C
ASN E0274	UD	2713	3 CF or EN 2266 Basic Cores + Suitable for UV Laser Marking	Shield: Nickel Plated Copper Spiral Shield Sheath: Polyimide Tapes + Topcoat	ASN 26 to 14 EN 26 to 12	200°C
	VL	2713	4 EN 2266 Basic Cores + Suitable for UV Laser Marking	Shield: Nickel Plated Copper Spiral Shield Sheath: Polyimide Tapes + Topcoat	EN 26 to 14	200°C

Hook-Up Wires - Airframe Wiring

Arc tracking and hydrolysis resistant - Lightweight.

Specifications		Construction		Wire Size (AWG)	Temperature Rating
Cable Code	EN				
REF.	REF.				
DR	2267-010A	Conductor: Nickel Plated Copper (AWG 22 to 2), High Strength Nickel Plated Copper Alloy (AWG 26 & 24) Insulation: Special Polyimide Tape + PTFE Tape(s) Suitable for UV Laser Marking		26 to 2	260°C
DRB	2267-009B	2 DRA of EN 2267-009A Basic Cores Twisted Cable		26 to 4	260°C
DRC	2267-009C	3 DRA of EN 2267-009A Basic Cores Twisted Cable		26 to 4	260°C
DRD	2267-009D	4 DRA of EN 2267-009A Basic Cores Twisted Cable		26 to 14	260°C
MLA	2714-013A	1 DRA or EN 2267-009A Basic Core Suitable for UV Laser Marking	Shield: Nickel Plated Copper Spiral Shield Sheath: Polyimide + PTFE Tapes	26 to 10	260°C
MLB	2714-013B	2 DRA or EN 2267-009A Basic Core Suitable for UV Laser Marking	Shield: Nickel Plated Copper Sheath: Polyimide + PTFE Tapes Spiral Shield	26 to 10	260°C
MLC	2714-013C	3 DRA or EN 2267-009A Basic Core Suitable for UV Laser Marking	Shield: Nickel Plated Copper Spiral Shield Sheath: Polyimide + PTFE Tapes	26 to 10	260°C
MLD	2714-013D	4 DRA or EN 2267-009A Basic Core Suitable for UV Laser Marking	Shield: Nickel Plated Copper Spiral Shield Sheath: Polyimide + PTFE Tapes	26 to 14	260°C
MME	2714-014E	5 DRA or EN 2267-009A Basic Core Suitable for UV Laser Marking	Shield: Nickel Plated Copper Spiral Shield Sheath: Polyimide + PTFE Tapes	18 to 12	260°C
MMF	2714-014F	6 DRA or EN 2267-009A Basic Core Suitable for UV Laser Marking	Shield: Nickel Plated Copper Spiral Shield Sheath: Polyimide + PTFE Tapes	On request	260°C
MMG	2714-014G	7 DRA or EN 2267-009A Basic Core Suitable for UV Laser Marking	Shield: Nickel Plated Copper Spiral Shield Sheath: Polyimide + PTFE Tapes	24	260°C

Hook-Up Wires - Airframe Wiring

Arc tracking and hydrolysis resistant - Hybrid insulation type.

Specifications		Construction		Wire Size (AWG)	Temperature Rating
Cable Code	EN				
REF.	REF.				
DM	2267-008A	Conductor : Nickel Plated Copper (AWG 22 to 06), High Strength Nickel Plated Copper Alloy (AWG 26 & 24) Insulation : Polyimide + PTFE Tapes Suitable for UV Laser Marking		26 to 06	260°C
PN	2267-007B	2 DMA of EN 2267-007 Basic Cores Twisted Cable		26 to 06	260°C
QL	2267-007C	3 DMA of EN 2267-007 Basic Cores Twisted Cable		26 to 06	260°C
RK	2267-007D	4 DMA of EN 2267-007 Basic Cores Twisted Cable		26 to 06	260°C
GJ	2714-011A	1 DMA or EN 2267-007 Basic Cores + Suitable for UV Laser Marking	Shield: Nickel Plated Copper Spiral Shield Sheath: Polyimide + PTFE Tapes	26 to 10	260°C
MH	2714-011B	2 DMA or EN 2267-007 Basic Cores + Suitable for UV Laser Marking	Shield: Nickel Plated Copper Spiral Shield Sheath: Polyimide + PTFE Tapes	26 to 10	260°C
UU	2714-011C	3 DMA or EN 2267-007 Basic Cores + Suitable for UV Laser Marking	Shield: Nickel Plated Copper Spiral Shield Sheath: Polyimide + PTFE Tapes	26 to 10	260°C
VV	2714-011D	4 DMA or EN 2267-007 Basic Cores + Suitable for UV Laser Marking	Shield: Nickel Plated Copper Spiral Shield Sheath: Polyimide + PTFE Tapes	26 to 14	260°C
MJ	2714-012E	5 DMA or EN 2267-007 Basic Cores + Suitable for UV Laser Marking	Shield: Nickel Plated Copper Spiral Shield Sheath: Polyimide + PTFE Tapes	18 to 12	260°C

Hook-Up Wires - Airframe Wiring

Arc tracking and hydrolysis resistant - Hybrid insulation type - Aluminum conductors.

Specifications			Construction		AWG Size	Rating Temp.
ABS		EN				
REF.	Type	REF.				
ABS 0949	AD		Conductor: Nickel Copper Clad Aluminum (AWG 24 to 4), Nickel Plated Aluminum (AWG 3 to 000) Insulation: Special Polyimide Tape + PTFE Tape(s) Suitable for UV Laser Marking		24 to 4	180°C
ABS 1354	ADB		2 ADA of ABS 1354 Basic Cores Twisted Cable		24 to 4	180°C
ABS 1354	ADC		3 ADA of ABS 1354 Basic Cores Twisted Cable		24 to 4	180°C
ABS 1354	ADD		4 ADA of ABS 1354 Basic Cores Twisted Cable		24 to 4	180°C
ABS 1354	ADE		1 ADA or ABS 1354 Basic Core Suitable for UV Laser Marking	Shield: Nickel Plated Copper Spiral Shield Sheath: Polyimide + PTFE Tapes	24	180°C
ABS 1356	VNA		2 ADA or ABS 1354 Basic Core Suitable for UV Laser Marking	Shield: Nickel Plated Copper Spiral Shield Sheath: Polyimide + PTFE Tapes	24 to 10	180°C
ABS 1356	VNB		3 ADA or ABS 1354 Basic Core Suitable for UV Laser Marking	Shield: Nickel Plated Copper Spiral Shield Sheath: Polyimide + PTFE Tapes	24 to 10	180°C
ABS 1356	VNC		4 ADA or ABS 1354 Basic Core Suitable for UV Laser Marking	Shield: Nickel Plated Copper Spiral Shield Sheath: Polyimide + PTFE Tapes	24 to 10	180°C
ABS 1356	VND		5 ADA or ABS 1354 Basic Core Suitable for UV Laser Marking	Shield: Nickel Plated Copper Spiral Shield Sheath: Polyimide + PTFE Tapes	24 to 14	180°C

Coaxial Cables

Specifications				Construction	Overall Diameter (nominal) mm	Characteristic Impedance	Temperature Rating
ASN/ABS/NSA		EN	MILC 17				
REF.	Type	REF.	Ref.				
ECS 0757	KE		No similar type	Inner Conductor: Silver Plated Copper Alloy Dielectric Core: PTFE Outer Conductor: 3 Silver Plated Copper Braids Jacket: 2 FEP Jackets	3.45	50Ω	200°C
ASN E0406	WD	EN 4604-008	No similar type	Inner Conductor: Silver Plated Copper Dielectric Core: Foamed FEP Outer Conductor: 2 Silver Plated Copper Braids Jacket: FEP	7.70	50Ω	200°C
ASN E0691	WM	EN 4604-006	No similar type	Inner Conductor: Silver Plated Copper Dielectric Core: Low Density PTFE Outer Conductor: 1 Silver Plated Copper Tape Jacket: FEP	3.85	50Ω	200°C
ASN E0692	WN	EN 4604-007	No similar type	Inner Conductor: Silver Plated Copper Dielectric Core: Low Density PTFE Outer Conductor: 1 Silver Plated Copper Tape + Silver Plated Copper Braid Jacket: PTFE	8.00	50Ω	200°C
ASN E0752	WS	EN 4604-004	No similar type	Inner Conductor: Silver Plated Copper Dielectric Core: PTFE Outer Conductor: Silver Plated Copper Braid + High Immunity Tape + Silver Plated Copper Braid Jacket: Polyimide Tape	2.50	50Ω	200°C
	WZ	EN 4604-003	No similar type	Inner Conductor: Silver Plated Copper Dielectric Core: Low Density PTFE Outer Conductor: 1 Metalized Foil + 1 Silver Plated Copper Braid Jacket: FEP	3.55	50Ω	200°C
NSA 935 344	XE		M17/138 00001 RG 188 AU	Inner Conductor: Silver Plated Annealed Copper Covered Steel Dielectric Core: PTFE Outer Conductor: 1 Silver Plated Copper Braid Jacket: PTFE	2.70	50Ω	200°C
ASN E0293	XF		M17/175 00001 RG 400 U	Inner Conductor: Silver Plated Copper Dielectric Core: PTFE Outer Conductor: 2 Silver Plated Copper Braids Jacket: FEP	4.95	50Ω	200°C
ASN E0690	WL	EN 4604-005	No similar type	Inner Conductor: Silver Plated Copper Alloy Dielectric Core: Low Density Fluorocarbon Outer Conductor: 2 Silver Plated Copper Braids Jacket: PFA	2.30	75Ω	200°C
ASN E0634	WH		M17/137 00001	Inner Conductor: Silver Plated Annealed-Copper-Covered Steel Dielectric Core: PTFE Outer Conductor: 1 Silver Plated Copper Braid Jacket: PFA	3.58	95Ω	200°C
	KW	EN 4604-009	No similar type	Inner Conductor: Silver Plated Copper Clad Aluminum Dielectric Core: Low Density PTFE Outer Conductor: 1 Silver Plated Copper Clad Aluminum Tape + 1 Silver Plated Copper Braid Jacket: FEP	7.65	50Ω	180°C
	KX	EN 4604-010	No similar type	Inner Conductor: Silver Plated Copper Dielectric Core: Low Density PTFE Outer Conductor: 1 Silver Plated Copper Tape + 1 Silver Plated Copper Braid Jacket: FEP	5.4	50Ω	200°C

Twinax Bus

Specifications			Construction		Overall Diameter (nominal) mm	AWG Size	Temperature Rating
ASN/ABS/NSA		EN					
REF.	Type	REF.					
ABS	WF		Shielded & Sheathed 100 Ω Data Bus Twisted Pair	Conductor: Nickel Plated Copper Alloy Insulation: PTFE Shield: Nickel Copper Braid Sheath: Polyimide Tapes	3.30	24	200°C
ASN	HE		Shielded & Sheathed 125 Ω Data Bus Twisted Pair	Conductor: Silver Plated Copper Alloy Insulation: PTFE Shield: Nickel Plated Copper Braid Sheath: Polyimide Tapes	4.50	24	150°C
ASN	XM	EN 3375-006	Shielded & Sheathed 78 Ω Data Bus Twisted Pair	Conductor: Silver Plated Copper Alloy Insulation: PTFE Shield: Nickel Plated Copper Braid Sheath: Polyimide Tapes	3.10	24	200°C
ASN	HJ		Shielded & Sheathed 75 Ω Data Bus Twisted Pair	Conductor: Nickel Plated High Strength Copper Alloy Insulation: Polyimide Tape(s) + PTFE Topcoat Shield: Nickel Plated Copper Braid + 2 High Immunity Tapes Sheath: Polyimide Tapes	3.00	26	200°C
ASN	WJ	EN 4604-004-B	Shielded & Sheathed 77 Ω Data Bus Twisted Pair	Conductor: Silver Plated Copper Alloy Insulation: PTFE Shield: 2 Tinned Plated Copper Braids Sheath: FEP	3.70	24	150°C
	WJ	EN 3375-004-B	Shielded & Sheathed 77 Ω Data Bus Twisted Pair	Conductor: Silver Plated Copper Alloy Insulation: PTFE Shield: 2 Silver Plated Copper Braids Sheath: FEP	3.70	24	200°C
	WV	EN 3375-004-C	Shielded & Sheathed 77 Ω Data Bus Twisted Pair	Conductor: Silver Plated Copper Alloy Insulation: PTFE Shield: Silver Plated Copper Braid + 1 High Immunity Tape + Silver Plated Copper Braid Sheath: FEP	3.80	24	200°C
ECS	WW	EN 3375-005	Shielded & Sheathed 77 Ω Data Bus Twisted Pair	Conductor: Silver Plated Copper Alloy Insulation: PTFE Shield: 2 Silver Plated Copper Braids Sheath: FEP	2.90	26	200°C
ASN	WY		Shielded & Sheathed 77 Ω Data Bus Twisted Pair	Conductor: Silver Plated Copper Alloy Insulation: PTFE Shield: 1 Silver Plated Copper Braid Sheath: FEP	2.50	26	200°C
	WX	EN 3375-009	Shielded & Sheathed 120 Ω Data Bus Twisted Pair	Conductor: Silver Plated Copper Alloy Insulation: PTFE Shield: Silver Plated Copper Braid Sheath: FEP	2.80	26	200°C

Quad Ethernet

Specifications			Construction		Overall Diameter (nominal) mm	AWG Size	Temperature Rating
ASN/ABS/NSA		EN					
REF.	Type	REF.					
ABS 1503	KD		Shielded Quad Cable 100 Suitable for UV laser marking	Conductor: Silver Plated Copper Insulation: FEP + Separator Tape Shield: 1 Silver Plated Copper Braid Sheath: FEP	4.40	24	125°C
	KL	EN 3375-011	Shielded Quad Cable 100 Suitable for UV laser marking	Conductor: Silver Plated Copper Insulation: PTFE + Separator Tape Shield: 1 Silver Plated Copper Braid Sheath: FEP	4.20	24	125°C

Optical Cables

Specifications		Construction		Overall Diameter (nominal) mm	Temperature Rating
ASN/ABS/NSA					
REF.	Type				
ABS 0963	LF	Optical Fiber Cable	Core: 62.5/125 Silica, Silicone coating 400um Jacket: Zero Halogen Copolymer Mechanical Strength: Polymer Aromatic Fiber Braid Outer Jacket: Zero Halogen Copolymer + FEP	1.8	125°C
ABS 2293	LG	Optical Fiber Cable	Core: 50/125 Silica. OM3 rated Mechanical Strength: Polymer Aromatic Fiber Braid Jacket: Fluoropolymer	1.8	135°C

Special Cables

Specifications			Construction		Overall Diameter (nominal) mm	AWG Size	Temperature Rating
ASN/ABS/NSA		EN					
REF.	Type	REF.					
MBBN 3320	YH 004-006	EN 4049-004	Thermocouple Cable	Conductors: Nickel Chromium/Nickel Aluminum Insulation: PTFE + Polyimide + PTFE Tapes Shield: Nickel Plated Copper Braid Jacket: Polyimide Tape + PTFE Tape	4.00 AWG 22 4.55 AWG 20	22 20	260°C
ASN E0385	HH		FEP Sheathed Coil Cord	3 CF 16 + 3 CF 22 Basic Wires + 7 PTFE Fillers Sheath: FEP			200°C
ASN E0488	HL		FEP Sheathed Coil Cord	6 CF 24 + 2 CF 20 + 1 CF 16 Basic Wires Sheath: FEP			200°C
NSA 935 306	YK		Shielded & Sheathed Low Noise Twisted Pair	Conductor: Silver Plated Annealed Copper-Cover Steel Insulation: PTFE + Low Noise Treatment Shield: Nickel Plated Copper Braid Sheath: Polyimide + PTFE Tapes Jacket: Polyimide Tape + PTFE Tape	4.36 MAX	22	260°C

Airbus Specification Wire & Cable

Flight Test Cables

Specifications		Construction		Overall Diameter (nominal) mm	Characteristic Impedance	Temperature Rating
ASN/ABS/NSA						
REF.	Type					
ASN E0409	BG	Suitable for UV laser marking	Conductor: Nickel Plated Copper (suitable for solderability) Insulation: PTFE Tape	0.97	24	200°C
ASN E0410	SU	1 ASN E0409 BG Basic Core + Suitable for UV laser marking	Shield: Nickel Plated Copper Spinning Sheath: Polyimide + PTFE Tape	1.42	24	200°C
ASN E0411	TV	2 ASN E0409 BG Basic Core Twisted Cable + PTFE + Separator Tape Suitable for UV laser marking	Shield: Nickel Plated Copper Spinning Sheath: Polyimide + PTFE Tape	2.54	24	200°C
ASN E0412	VF	4 ASN E0409 BG Basic Cores Twisted Cable + PTFE Separator Tape+ Suitable for UV laser marking	Shield: Nickel Plated Copper Spinning Sheath: Polyimide + PTFE Tape	3.00	24	200°C
ASN E0413	HK	Thermocouple Cable	Conductor: Nickel Chromium/Nickel Aluminum Insulation: PTFE Tape Shield: Nickel Plated Copper Braid Sheath: Polyimide + PTFE Tape	2.70	24	260°C

Fire Resistant Cables

Specifications			Construction		AWG Size	Temperature Rating
ASN/ABS/NSA		EN				
REF.	Type	REF.				
ASN E0437	DL	EN 2346-003	Conductor: 27% Nickel Clad Copper Alloy for AWG 22, 27% Nickel Clad Copper Alloy for other AWG Insulation: Silica Fiber + Fiberglass Braid + PTFE Tape Application: Fire Resistant Wires		22 to 16	260°C
ECS 0741	DW	EN 2346-005	Conductor: 27% Nickel Clad Copper Alloy for AWG 22, 27% Nickel Clad Copper Alloy for other AWG Insulation: Fire Resistant Insulation + PTFE Tape Application: Fire Proof Wires Suitable for UV Laser Marking		22 to 14	260°C
ECS 0741	DWB	EN 2346-003	2 DWA Basic Cores Twisted Cable	Application: Fire Proof Wires	22 to 14	260°C
ECS 0741	DWC	EN 2346-005	3 DWA Basic Cores Twisted Cable	Application: Fire Proof Wires	22 to 14	260°C
ECS 0742	GPA	EN 4608-004	1 DWA Basic Core + Suitable for UV Laser Marking	Shield: Nickel Plated Copper Braid Sheath: PTFE Tapes Application: Fire Proof Wires	22 to 14	260°C
ECS 0742	GPB	EN 4608-004	2 DWA Basic Core + Suitable for UV Laser Marking	Shield: Nickel Plated Copper Braid Sheath: PTFE Tapes Application: Fire Proof Wires	22 to 14	260°C
ECS 0742	GPC	EN 4608-004	3 DWA Basic Core + Suitable for UV Laser Marking	Shield: Nickel Plated Copper Braid Sheath: PTFE Tapes Application: Fire Proof Wires	22 to 14	260°C

Power Feeder Cables

Specifications			Construction	AWG Size	Temperature Rating
ASN/ABS/NSA		EN			
REF.	Type	REF.			
ASN E0438	YV		Conductor: Nickel Plated Aluminum Alloy Insulation: PTFE Tape + Aromatic Polyimide Braid Coated with Nonflammable Lacquer	06 to 0000	180°C
ASN E0471	GP		3 ASNE0438 Basic Cores Twisted Cable	06	180°C
NSA 935 308	YU		Conductor: Aluminum Alloy Insulation: Polyimide Tapes + Aromatic Polyimide Braid Coated with Nonflammable Lacquer	04 to 0000	150°C
NSA 935 131	DG	EN 2854	Conductor: Nickel Plated Copper Insulation: Composite Polyimide Fiber Glass Tape + PTFE Tape(s)	10 to 0000	260°C
ABS 0949	AD		Conductor: Nickel Plated Aluminum Insulation: Special Polyimide Tape + PTFE Tape(s)	3 to 0000	180°C
ABS 1354	ADB, ADC, ADD		2, 3 or 4 ADA or ABS 1354 Basic Cores Twisted Cable	3 to 0000 3 to 1	180°C

Military Specification Wire & Cable - MIL-W-16878 (NEMA HP3, HP4)

Part Number (Former) Mil-W-16878	Part Number (Replacement) Mil-W-22759
Mil-W-16878/4-B	Mil-W-22759/11
Mil-W-16878/4-D	Mil-W-22759/22

Part Number Guide

Example part number:

M16878/ 4 B F B *

- **Color Code**
- **Conductor Stranding**
- **Wire Size (AWG)**
- **Conductor Material**
  - A = Bare Copper
  - B = Coated Copper
  - C = Coated Copper Covered Steel
  - D = Coated High Strength Copper Alloy
- **Specification Sheet**
- **Military Designation**

Wire Size (AWG)

AWG	Letter	AWG	Letter	AWG	Letter	AWG	Letter	AWG	Letter
32	A	22	F	14	K	6	P	0	U
30	B	20	G	12	L	4	R	00	W
28	C	18	H	10	M	2	S	000	Y
26	D	16	J	8	N	1	T	0000	Z
24	E								

Conductor Stranding

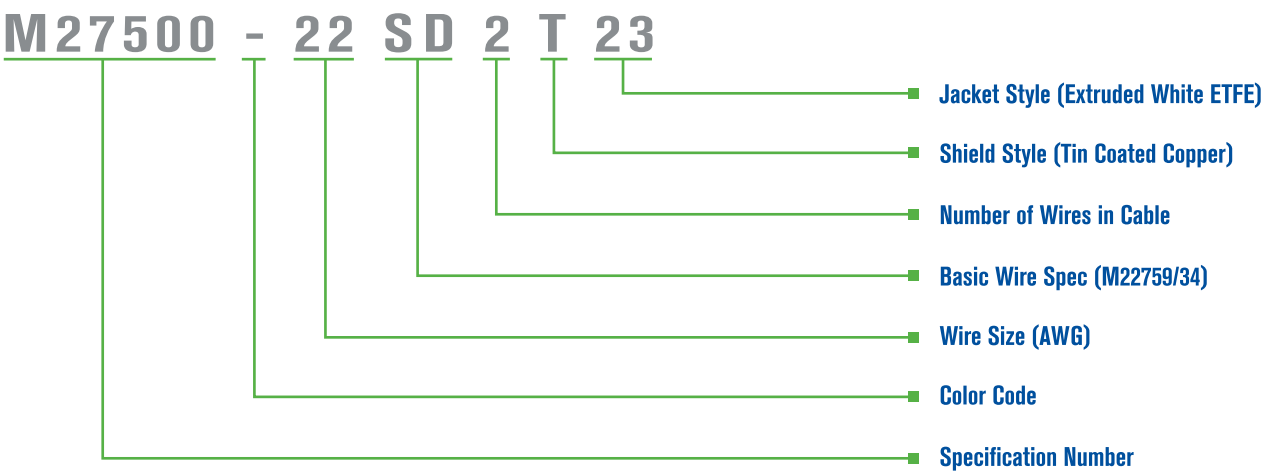
Number of Strands	Letter	Number of Strands	Letter	Number of Strands	Letter	Number of Strands	Letter	Number of Strands	Letter
1	A	19	E	65	J	427	N	1330	T
7	B	29	F	105	K	665	P	1672	V
10	C	37	G	133	L	817	R	2109	W
16	D	41	H	259	M	1045	S		

Color Code

Color	Number Designator	Color	Number Designator	Color	Number Designator	Color	Number Designator
Black	0	Orange	3	Blue	6	Gray	8
Brown	1	Yellow	4	Violet	7	White	9
Red	2	Green	5				

Part Number Guide

Example part number:



Color Code

Designation	1 COND	2 COND	3 COND	4 COND	5 COND	6 COND	Shield Coverage
--	9	9, 96	9, 96, 93	9, 96, 93, 95	9, 96, 93, 95, 92	9, 96, 93, 95, 92, 90	85%
A		9, 6	9, 6, 3	9, 6, 3, 5	9, 6, 3, 5, 2	9, 6, 3, 5, 2, 0	85%
B	Solid color, color denotes wire size (refer table III C, per spec), Identify by banding marks (refer table III D, per spec)						85%
C	Same as "--"						90%
D	Same as "A"						90%
E	Same as "B"						90%
F		92, 96	92, 96, 94	92, 96, 94, 95	92, 96, 94, 95, 9	92, 96, 94, 95, 9, 90	85%
G		2, 6	2, 6, 4	2, 6, 4, 5	2, 6, 4, 5, 9	2, 6, 4, 5, 9, 0	85%
H		92, 96	92, 96, 94	92, 96, 94, 95	92, 96, 94, 95, 9	92, 96, 94, 95, 9, 90	90%
J		2, 6	2, 6, 4	2, 6, 4, 5	2, 6, 4, 5, 9	2, 6, 4, 5, 9, 0	90%
K	Solid color, color denotes wire size (refer table III C, per spec), Identify wire by numbering						85%
L	Insulation shall be white or natural, Identify wire by numbering (refer table III D per spec)						85%
M	Same as "K"						90%
N	Same as "L"						90%

Military Specification Wire & Cable - NEMA WC27500 (Formerly MIL-DTL-M27500)

Basic Wire Specification & Symbol

Symbol	Specification	Symbol	Specification	Symbol	Specification	Symbol	Specification
AS50861/1[1]	A	AS22759/18	TG	AS22759/81[3]	WC	MIL-DTL-25038/1	JA
AS50861/2[1, 2]	B	AS22759/19	TH	AS22759/82[3]	WE	MIL-DTL-25038/3	JF
AS50861/3[1, 2]	C	AS22759/20	TK	AS22759/83[3]	WF	AS81044/5[2]	MD
AS50861/4[1]	P	AS22759/21	TL	AS22759/84[3]	WG	AS81044/6	ME
AS50861/5[1]	AA	AS22759/22	TM	AS22759/85[3]	WH	AS81044/7	MF
AS50861/6[1]	AB	AS22759/23	TN	AS22759/86[3]	WJ	AS81044/8[2]	MG
AS50861/7[1]	AD	AS22759/28	JB	AS22759/87[3]	WK	AS81044/9	MH
MIL-DTL-8777, MS25471[2]	H	AS22759/29	JC	AS22759/88[3]	WL	AS81044/10	MJ
MIL-DTL-8777, MS27110	F	AS22759/30	JD	AS22759/89[3]	WM	AS81044/11[2]	MK
AS22759/1	EA	AS22759/31	JE	AS22759/90[3]	WN	AS81044/12	ML
AS22759/2	E	AS22759/32	SB	AS22759/91[3]	WP	AS81044/13	MM
AS22759/3	RA	AS22759/33	SC	AS22759/92[3]	WR	MIL-DTL-81381/7[3]	MR
AS22759/4	RB	AS22759/34	SD	AS22759/180	DB	MIL-DTL-81381/8[3]	MS
AS22759/5	VA	AS22759/35	SE	AS22759/181	DC	MIL-DTL-8 1381/9[3]	MT
AS22759/6	WA	AS22759/41	SM	AS22759/182	DE	MIL-DTL-81381/10[3]	MV
AS22759/7	SA	AS22759/42	SN	AS22759/183	OF	MIL-DTL-81381/11[3]	MW
AS22759/8	TA	AS22759/43	SP	AS22759/184	DG	MIL-DTL-81381/12[3]	MY
AS22759/9	LE	AS22759/44	SR	AS22759/185	DH	MIL-DTL-81381/13[3]	NA
AS22759/10	LH	AS22759/45	SS	AS22759/186	DJ	MIL-DTL-8 1381/14[3]	NB
AS22759/11	RC	AS22759/46	ST	AS22759/187	DK	MIL-DTL-81381/17[3]	NE
AS22759/12	RE	AS22759/47	SV	AS22759/188	DL	MIL-DTL-81381/18[3]	NF
AS22759/13	CA	AS22759/48	SW	AS22759/189	OM	MIL-DTL-81381/19[3]	NG
AS22759/14	CB	AS22759/49	SX	AS22759/190	ON	MIL-DTL-81381/20[3]	NH
AS22759/15	CC	AS22759/50	SY	AS22759/191	DP	MIL-DTL-81381/21[3]	NK
AS22759/16	TE	AS22759/80[3]	WB	AS22759/192	DR	MIL-DTL-81381/22[3]	NL
AS22759/17	TF						

[1] Not for use in aerospace applications. [2] Inactive for new design. [3] Not for Naval Air Systems Command usage.

Shield Style

Symbol	Double Shield	Shield Style	Shield Max Temp
U	--	No Shield	--
T	V	Tin Coated Copper, Round	150°C (302°F)
S	W	Silver Coated Copper, Round	200°C (392°F)
N	Y	Nickel Copper, Round	260°C (500°F)
F	Z	Stainless Steel, Round	400°C (752°F)
C	R	Heavy Nickel Coated Copper, Round	400°C (752°F)
M	K	Silver Coated High-Strength Copper Alloy, Round	200°C (392°F)
P	L	Nickel Coated High-Strength Copper Alloy, Round	260°C (500°F)
G	A	Silver Coated Copper, Flat	200°C (392°F)
H	B	Silver Coated High Strength Copper Alloy, Flat	200°C (392°F)
*	#	Nickel Coated Copper, Flat	260°C (500°F)
J	D	Tin Coated Copper, Flat	150°C (302°F)
E	X	Nickel Coated High Strength Copper Alloy, Flat	260°C (500°F)
I	Q	Nickel Chromium Alloy, Flat	400°C (752°F)

Jacket Style

Single Jacket Symbol	Double Jacket Symbol	Jacket Style	Temp Limit for Jacket Material
00	00	No Jacket	--
01	51	Extruded White PVC	90°C (194°F)
02	52	Extruded Clear Polyamide in accordance with ASTM D4066	105°C (221°F)
03	53	White Polyamide Braid impregnated with Clear Polyamide Finisher over Polyester Tape	105°C (221°F)
04	54	Polyester Braid impregnated with High Temp Finishers over Polyester Tape	150°C (302°F)
05	55	Extruded Clear FEP	200°C (392°F)
06	56	Extruded or Taped and Heat Sealed White PTFE	260°C (500°F)
07	57	White PTFE Treated Glass Braid impregnated and Coated with PTFE Finisher over Presintered PTFE Tape	260°C (500°F)
08	58	Crosslinked White Extruded Polyvinylidene (PVF)	150°C (302°F)
09	59	Extruded White FEP	200°C (392°F)
10	60	Extruded Clear PVF	125°C (257°F)
11	61	Tape of Natural Polyamide/FEP Heat Sealed with FEP outer surface	200°C (392°F)
12	62	Tape of Natural Polyamide/FEP Wrapped and Heat Sealed with Polyamide Outer Surface	200°C (302°F)
14	64	Extruded White ETFE (tefzel)	150°C (302°F)
15	65	Extruded Clear ETFE (tefzel)	150°C (302°F)
16	66	Braid of Aromatic Polyamide with Hig-Temp Finisher over Presintered PTFE Tape (Nomex)	200°C (392°F)
17	67	White Extruded ECTFE	150°C (302°F)
18	68	Clear Extruded ECTFE	150°C (302°F)
20	70	Extruded White PFA	260°C (500°F)
21	71	Extruded Clear PFA	260°C (500°F)
22	72	Tape of Polyamide/FEP Wrapped and Heat Sealed with Opaque Polyamide Outer Surface	200°C (392°F)
23	73	White Crosslinked Extruded Modified XLETFE	200°C (392°F)
24	74	Tape Layer of PTFE Wrapped over a Tape Layer of Natural Polyamide Combined with FEP and Heat Sealed	260°C (500°F)
25	75	Tape Layer of Seamless PTFE Wrapped over a Tape Layer of Natural Polyamide Combined with FEP and Heat Sealed	260°C (500°F)

Aerospace Grade 10/100/1000 Base-T Ethernet Cables

Netflight® Cables

	100 Base-T – Twisted Pair		100 Base-T – Shielded Quad			100 Base-T – Single Twisted Pair		
	22 AWG	24 AWG	22 AWG	24 AWG	26 AWG	22 AWG	24 AWG	26 AWG
Part Number	NF22P100	NF24P100	NF22Q100	NF24Q100	NF26Q100	NF22T100	NF24T100	NF26T100
Impedance (Ohms)	100		100			100		
Velocity of Propagation	80%		80%			80%		
Attenuation at 100 MHz (db/100ft)	5.6/6.7	6.0/7.1	6.4/7.3	8.0/9.2	9.3/11.0	5.8/6.7	6.6/7.7	8.5/9.9
Weight (lbs/1000 ft)	43	35	34.5	24.5	18.0	26.0	18.0	15.0
Size (in.)	0.195x0.290	0.175x0.270	0.190	0.163	0.137	0.180	0.145	0.132
Bend Radius (in.)	1.95	1.75	1.90	1.63	1.37	1.80	1.45	1.32
Operating Temperature	-55 to 150°C		-55 to 150°C			-55 to 150°C		
Other	Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity		Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity			Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity		

Gigabit Series Cables

		Gigabit 10-HP™		Gigabit-Plus™		Gigabit-Flexx™		Gigabit-STP™		Gigabit-S2Q™		Gigabit-UTP™	
		24 AWG	26 AWG	24 AWG	26 AWG	24 AWG	26 AWG	24 AWG	26 AWG	24 AWG	26 AWG	24 AWG	26 AWG
Part Number		MX10G-24HP	MX10G-26HP	MX10G-24	MX10G-26	MX10G-24FLX	MX10G-26FLX	NF24-P4-100*	NF26-P4-100*	NF24-2Q100	NF26-2Q100	NF24GB100	NF26GB100
Impedance (Ohms)		100		100		100		100		100		100	
DC Resistance (100 ft)		2.76 Ohms	4.38 Ohms	2.76 Ohms	4.38 Ohms	2.76 Ohms	4.38 Ohms	2.76 Ohms	4.38 Ohms	2.76 Ohms	4.38 Ohms	2.76 Ohms	4.38 Ohms
Velocity of Propagation		70%		70%		70%		80%		80%		80%	
Attenuation (100m)	100 MHz	22 dB	29 dB	24 dB	29 dB	26.4 dB	31.6 dB	19.7 dB	26.2 dB	26.2	30.5 dB	26.2 dB	30.5 dB
	250 MHz	32 dB	48 dB	40 dB	48 dB	-	-	-	-	-	-	-	-
	500 MHz	48 dB	68 dB	-	-	-	-	-	-	-	-	-	-
Weight (lbs/1000 ft)		55	35	50	35	35	28	83	61	58	45	41	32
Size (in.)		.290	.225	.270	.220	.245	.195	.340	.250	.305	.265	.245	.205
Min. Bend Radius (in.)		.50	.50	2.00	1.75	1.00	0.75	3.40	2.50	3.05	2.65	2.45	2.05
Operating Temperature		-55 to 150°C		-55 to 150°C		-55 to 200°C		-55 to 150°C		-55 to 150°C		-55 to 150°C	
Other		ROHS Compliant		ROHS Compliant		ROHS Compliant		Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity		Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity		Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity	
		Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity		Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity		Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity							

* 24773/1A042X-8(LD) and 26463/1A042X-8(LD) are cables designed specifically for use with an Octax™ connector.

Laser Marking & Test Capabilities

Spectrum Capris 50-300ES & Spectrum Capris 60 UltravioletLaser Marking

» Laser Marking offers a non-destructive and effective alternative to the traditional “Hot Stamping” method of wire marking
» Clear print, quality mark
» Variable font sizes
» Permanent under all known operating conditions with no effect on the wire’s electrical or mechanical properties
» We offer marking of single conductor wires/jacketed multi conductor cables, shielded and unshielded
» We offer marking of white and colored insulations including PTFE, ETFE, XLETFE and FEP
» Marks horizontally and vertically
» 96 characters per identification
» Complies with Mil-W-5088L and BAC5152 specs

Test Capabilities

Equipment:

» Omnitester Model 2501
» Cirris 1500V Touch-1 Systems
» Cable Scan
» Fluke 8842 Meter
» HP RF Network Analyzer HP8714C
» Fluke DSP 4300 & DTX
» Fluke LCR Bridge
» Slaughter AC Hi-Pot

Available Tests:

» Insulation Resistance (IR)
» Dielectric Withstand Voltage (DWV)
» Continuity & Isolations
» RF Testing
» Components, resistors, capacitors and Diodes
» Custom Testing
» Test reports are available upon request

Carlisle Interconnect Technologies is one of the world’s leading designers and manufacturers of high performance interconnect systems. The skills and expertise we’ve developed over a half-century in business provide customers with resources of technical leadership and in-depth knowledge of their industry. The net results are cabling and interconnect solutions that meet and exceed our customers’ expectations.

Other Products & Services

Assemblies

Avionics RF Assemblies
» Leaky Feeder Assemblies
» Low PIM Assemblies
» Radio Altimeter Cable Assemblies
» TCAS Cable Sets

Data Bus, Power & Video Assemblies
» HDMI, DVI and Coax Digital Video Assemblies
» Octax® High Speed Data Assemblies
» FlightGear™ 5v Power Cable

Fiber Optic Assemblies

Harness Assemblies

High Density Coaxial Assemblies
» HDRFI®
» HDSI®

RF/Microwave Assemblies
» AccuPhase® Low Loss Coaxial Assemblies
» Conformable - Semi-Flex®
» Semi-Rigid
» WorkHorse® Test Assemblies

Connectors

Avionics RF Connectors

Backshells
» Compact D-Sub Backshells
» EN4165/BACC65 Series
» Flexible Backshells
» Multi-Exit Angle
» Straight Exit Angle
» Universal Spring Latches

Data Bus Connectors
» Octax™ In-Line
» Octax™ Ganged, EPX, 38999 & EN4165

EMI Protection & Transient Voltage Suppression
» Circular Filtered
» D-Sub and Micro-D Filter Connectors
» EPX Filter Connectors
» Rectangular Filtered
» TVS - Transient Voltage Suppression Connectors

FlightGear™ Blind Mate Antenna Connector

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» HDRFI®
» HDSI®

RF/Microwave Connectors
» Microwave Adapters
» Phase Adjusters
» Push-On Connectors
» Swept/Radius Right Angle Connectors
» Thread-On Connectors

Specialty Connectors
» CB/CBX All Plastic Connectors
» CBC Galley Connectors
» CLP/CLPP Circular Connectors
» CQ Connectors
» Terminal & Grounding Blocks

Contacts

Coaxial Contacts

Crimp Contacts

Custom Designed Contacts

PC Tail Contacts

Solder Cup & Wire Wrap Contacts

Thermocouple Contacts

Services

Aircraft on Ground (AOG)

Build-to-Print Manufacturing

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» Parts Manufacturer Approval (PMA)
» Supplemental Type Certificates (STCs)

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» Qualification & Testing

Kitting Solutions
» Aircraft Modification Kits
» Fiber Optic Test & Inspection Kits

Custom Overbraiding Service

Structures

Antenna Mounts & Accessories
» Antenna Doubler and Adapter Plates
» Cable Feed Thru Assemblies
» FlightGear™ Blind Mate Antenna Connector
» Leaky Feeder Assemblies

ARINC LRC & Custom Enclosures

Custom Structural Components
» Circuit Breaker Protection
» Complex Machined Parts
» Intercostal and Secondary Structures

Instrument/Control Panels
» Backlit Switch Panels
» FlightGear™ USB Power Port
» FlightGear™ Smoke Detector Control Panels

Rack and Shelf Assemblies
» Aluminum Equipment Racks
» Aluminum Equipment Shelves
» Composite Equipment Racks
» Overhead Stowage Bin Racks and Structures

Trays
» ABS1699 ARINC 600 Trays
» ARINC 404A Trays
» ARINC 600 Trays
» Custom Trays and Mounts
» Lightweight ARINC Trays

Tray Accessories
» Advanced Thumbscrew Hold-Downs
» Insertion-Extraction Hold-Downs
» Military Style Hold-Downs
» Negative Pressure Air Filtration Systems
» Positive Pressure Air Filtration Systems
» Sensors
» Stand-Offs

Systems

Automatic Dependant Surveillance Broadcast (ADSB)

EFB Electronic Flight Bag Systems
» EZMount® Tablet Cradle
» EZMount® EFB Mounting solutions
» FlightGear™ USB Power Port
» FlightGear™ 5v Power Cable

Global Positioning System/Multi-Mode Receiver (GPS/MMR)

In-Flight Entertainment & Connectivity

SATCOM

Traffic Alert & Collision Avoidance System (TCAS)

Wire & Cable

Cable Assembly & Repair
» Coaxial Cable Stripper
» Crimp Splices
» Heatless Crimp Splices
» Tie Cords & Lacing Tapes

Commercial UL/CSA Wire

Composite Aerospace Wire
» BMS 13-60
» Seamless™ AS22759/80-/92
» Seamless-T™ AS22759/180-/192
» Tufflite® Enhanced Normal Weight - ST
» Tufflite® European Metric - TLR

Fiber Optic Cable
» LITEflight® EP
» LITEflight® HD
» Fiber Optic Test & Inspection Kits

Harsh Environment, Engine, Firezone & SWAMP
» BMS 13-55
» BMS 13-58
» EFGLAS Equipment Wire & Cable
» ESW Firezone Specifications
» MIL-W-25038 Wire

High Performance Coax
» AccuPhase® Low Loss Coaxial Cable
» Avionics RF Cable
» BMS 13-65
» MaxForm® Formable Coaxial Cable
» MIL-C-17 Coaxial Cable
» TMaxx™ Low Loss Coaxial Cable

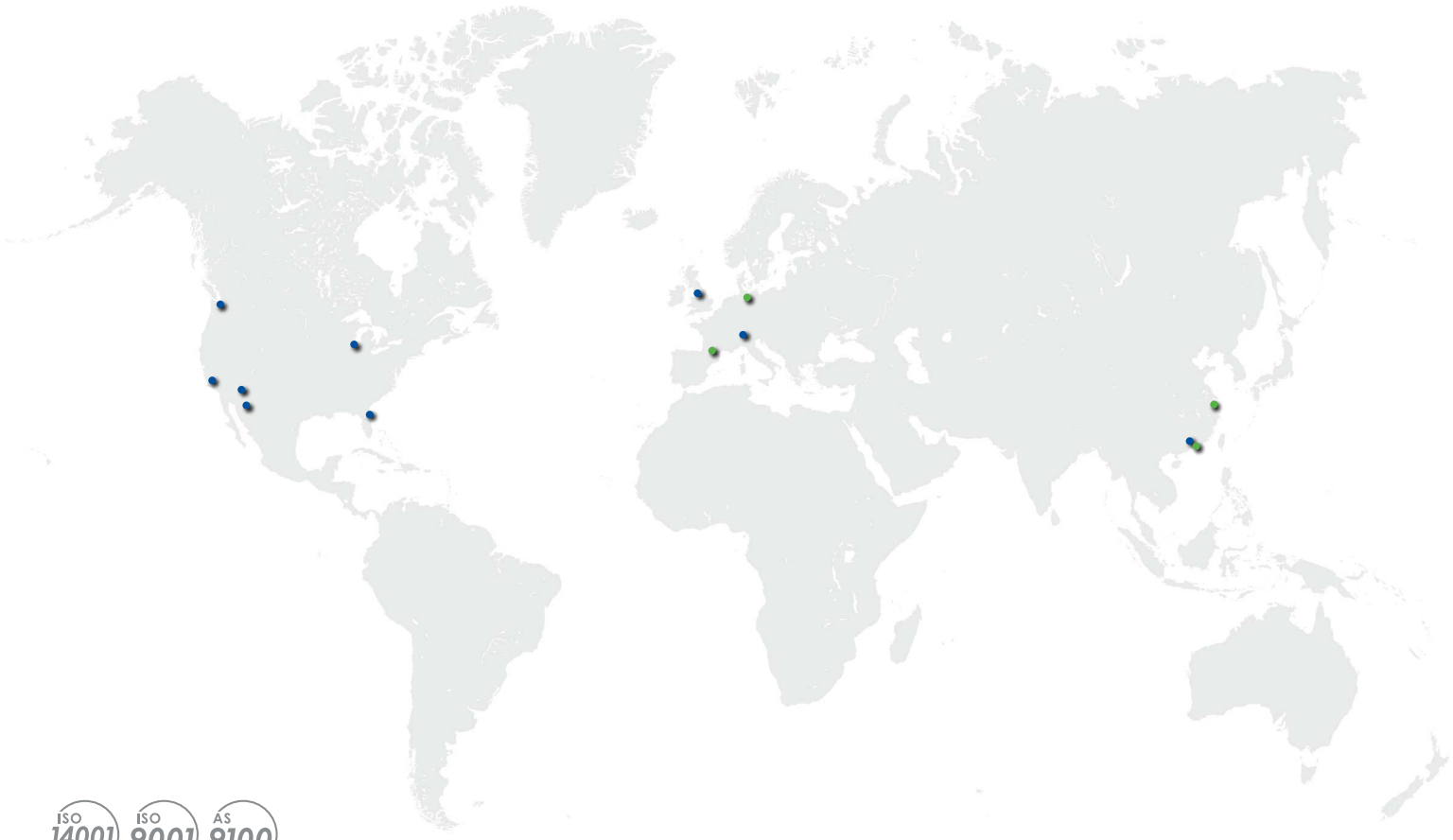
High Speed Digital & Data Cable
» Boeing Approved Data Cables
» General Aviation Data Cables
» Gigabit Ethernet Series
» Maxflite® Cables
» Netflight® Cables

Industrial Wire & Cable
» Anode Cables for Cathodic Protection
» PEEK Equipment Wire & Cable
» Polyimide Equipment Wire & Cable
» Thermocouple Cables
» Zyrad™ and Trakrad™ Wire

Mil-Spec Hookup Wire
» AS22759 Wire
» MIL-C-17 Coaxial Cable
» MIL-DTL-27500 Cable
» MIL-W-16878 Wire (NEMA HP3, HP4)
» MIL-W-25038 Wire
» MIL-W-81381 Wire
» MIL-W-81822 Wire

Specialty Cables
» Coil Cords
» Heating Cables
» Low-Noise Cable

CARLISLE
INTERCONNECT TECHNOLOGIES



ISO 14001 CERTIFIED · ISO 9001 CERTIFIED · AS 9100 CERTIFIED

All of our facilities are
ISO9001 & AS9100 Registered

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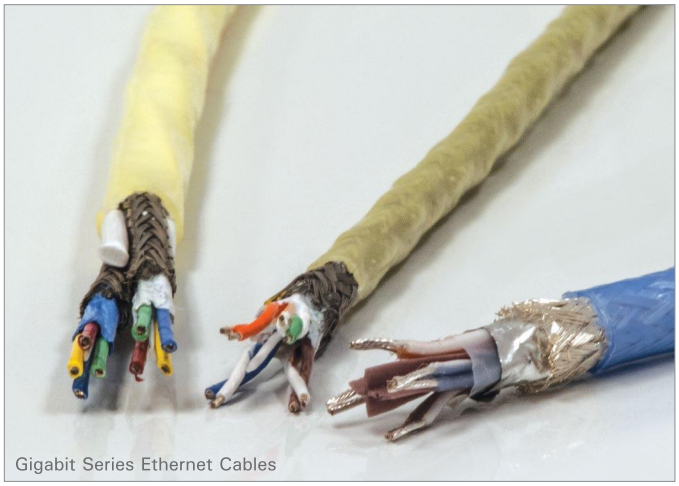
Manufacturing & Sales
T 661.295.3100

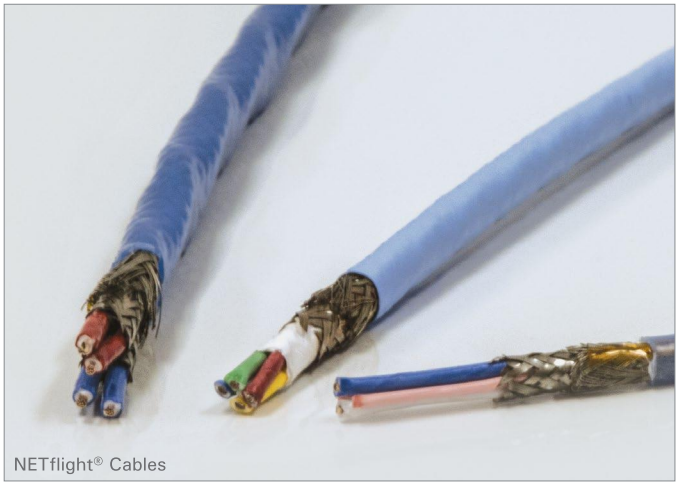
Tensolite · Thermax · RAYDEX THE CABLE COMPANY · TRI-STAR ELECTRONICS INTERNATIONAL, INC. · JERRIK · EQS · CDI · OMI

Rev. 022614-500

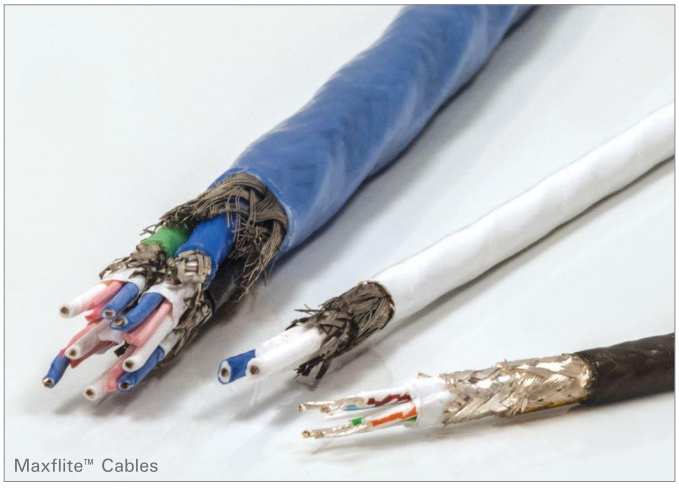
Data Cables



Gigabit Series Ethernet Cables



NETflight® Cables



Maxflite™ Cables

INTRODUCTION

Carlisle Interconnect Technologies (CarlisleIT) manufactures a wide variety of high performance data cables designed to meet the needs of the aerospace, defense, military, ground transportation, industrial and RF communication markets. Typical applications include: Ethernet backbone, avionics, high-definition video, cabin management systems, in-flight entertainment and databus applications.

Gigabit Series Ethernet cables have been developed in a wide variety of configurations to provide 1 and 10 Gb performance in the most demanding applications. Our proven NETflight® Ethernet cables in single pair, dual pair and quadrax configurations are widely used throughout the aerospace industry and provide superior electrical and mechanical performance. Our Maxflite™ series provides high speed performance for the popular video and data bus protocols: HDMI, DVI, USB, Firewire and CAN bus. In addition to the standard protocols, when a custom solution is required, CarlisleIT has experienced on-site engineering to design a cable to meet your needs.

Pair our Gigabit cables with an octax connector for an ultra high-speed assembly.

FEATURES & BENEFITS

» Exceptional electrical and mechanical performance
» Operating performance from -55°C to 200°C
» Meets the requirements of aerospace and other harsh environments including FAR 25.853 flammability and Boeing/Airbus smoke and toxicity requirements
» Multiple configurations to meet the needs of almost any application
» Lightweight versions to address weight and space requirements
» Advanced technologies such as Bonded-Pairs and an innovative X-Web reduce cross talk and ensure installable performance

Gigabit Series

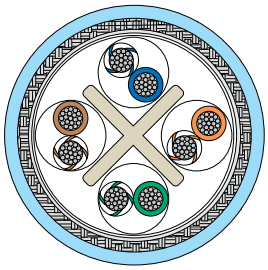
		Gigabit-10HP™	Gigabit-Plus™		Gigabit-Flexx™		Gigabit-STP™	Gigabit-S2Q™	
		24 AWG	24 AWG	26 AWG	24 AWG	26 AWG	26 AWG	24 AWG	26 AWG
Part Number*		MX10G-24HP	MX10G-24	MX10G-26	MX10G-24FLX	MX10G-26FLX	NF26-6BSTP-100	NF24-2Q100	NF26-2Q100
Impedance (ohms)		100	100		100		100	100	
DC Resistance (100 ft)		2.76 ohms	2.76 ohms	4.38 ohms	2.76 ohms	4.38 ohms	4.38 ohms	2.76 ohms	4.38 ohms
Velocity of Propagation		70%	70%		70%		77%	80%	
Attenuation	100 MHz (dB/100 m)	22.0	24.0	29.0	26.4	31.6	38.0	26.2	30.5
	250 MHz (dB/100 m)	32.0	40.0	48.0	-	-	62.0	-	-
	500 MHz (dB/100 m)	48.0	-	-	-	-	90.6	-	-
Weight: lbs/1000 ft (Kg/1000 m)		55 (82)	50 (74)	35 (52)	35 (52)	28 (42)	50 (74)	58 (86)	45 (68)
Size: in. (mm)		0.290 (7.36)	0.270 (6.86)	0.220 (5.59)	0.245 (6.22)	0.195 (4.95)	0.300 (7.62)	0.305 (7.75)	0.265 (6.73)
Min. Bend Radius: in. (mm)		0.50 (12.70)	2.00 (50.80)	1.75 (44.45)	1.00 (25.40)	0.75 (19.05)	3.00 (76.20)	3.05 (77.50)	2.65 (67.30)
Operating Temperature		-55 to 150°C	-55 to 150°C		-55 to 200°C		-55 to 150°C	-55 to 150°C	
Other		RoHS Compliant	RoHS Compliant		RoHS Compliant		RoHS Compliant	Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity	
		Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity	Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity		Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity		Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity		

*Highlighted part numbers above are designed for use with CarlisleIT's Octax® connector. Reference Ultra High-Speed Interconnect Solutions brochure.

CABLE CROSS SECTIONS

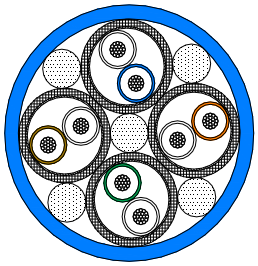
Gigabit-10HP™

Gigabit-Plus™

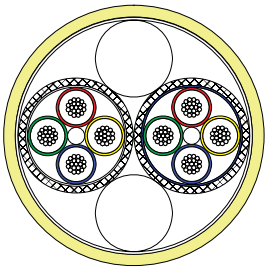


Gigabit-Flexx™

Gigabit-STP™



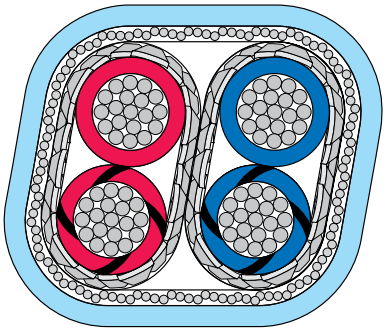
Gigabit-S2Q™



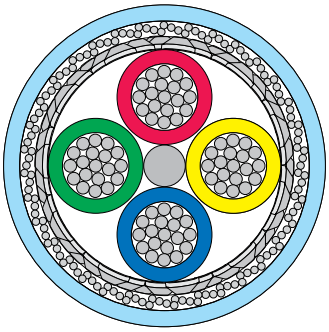
	100 Base-T – Twisted Pair		100 Base-T – Shielded Quad			100 Base-T – Single Twisted Pair		
	22 AWG	24 AWG	22 AWG	24 AWG	26 AWG	22 AWG	24 AWG	26 AWG
Part Number	NF22P100	NF24P100	NF22Q100	NF24Q100	NF26Q100	NF22T100	NF24T100	NF26T100
Impedance (ohms)	100		100			100		
Velocity of Propagation	80%		80%			80%		
Attenuation at 100 MHz (dB/100 ft)	5.6	6.0	6.4	8.0	9.3	5.8	6.6	8.5
Weight: lbs/1000 ft (Kg/1000 m)	43 (64)	35 (51)	35 (51)	25 (37)	18 (39)	26 (38)	18 (26)	15 (22)
Size: in. (mm)	0.195 x 0.290 (4.95 x 7.37)	0.175 x 0.270 (4.45 x 6.86)	0.190 (4.83)	0.163 (4.14)	0.137 (3.45)	0.180 (4.57)	0.145 (3.68)	0.132 (3.35)
Bend Radius: in. (mm)	1.95 (49.5)	1.75 (44.5)	1.90 (48.3)	1.63 (41.4)	1.37 (34.5)	1.80 (45.7)	1.45 (36.8)	1.32 (33.5)
Operating Temperature	-55 to 150°C		-55 to 150°C			-55 to 150°C		
Other	Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity		Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity			Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity		

CABLE CROSS SECTIONS

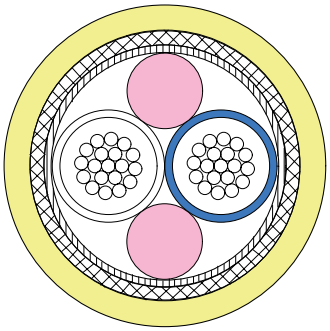
100 Base-T – Twisted Pair



100 Base-T – Shielded Quad



100 Base-T – Single Twisted Pair

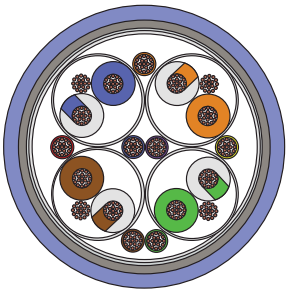


Maxflite™

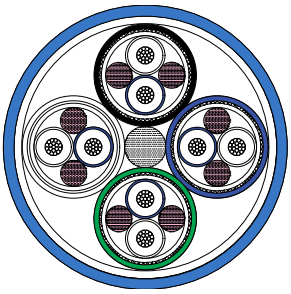
	HDMI (1.3)	DVI	USB 2.0	IEEE 1394 Firewire	CAN Bus
Part Number	1586-305	24463/05099X-8(LD)	28433/02171LX-4	24483/03063LX-6(LD)	CAN24TST120
Impedance (ohms)	100	100	90	110	120
Velocity of Propagation	70%	75%	69%	79%	79%
Attenuation (dB/100 ft)	15 at 300 MHz	N/A	14 at 100 MHz	11 at 200 MHz	1 at 1 MHz
	36 at 1.6 GHz		24 at 200 MHz	17 at 400 MHz	2 at 6 MHz
	59 at 4.1 GHz		36 at 400 MHz	24 at 800 MHz	2.7 at 10 MHz
Cable Weight: lbs/1000 ft (Kg/1000 m)	72 (107)	105 (156)	15 (23)	78 (116)	14 (20)
Cable Diameter: in. (mm)	0.315 (8.00)	0.40 (10.16)	0.140 (3.56)	0.34 (8.64)	0.142 (3.61)
Min. Bend Radius: in. (mm)	1.89 (48)	4.0 (102)	1.40 (36)	3.40 (86)	1.42 (36)
Operating Temperature	-55 to 150°C	-55 to 150°C	-55 to 150°C	-55 to 150°C	-55 to 150°C
Other	Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity	Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity	Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity	Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity	Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity

CABLE CROSS SECTIONS

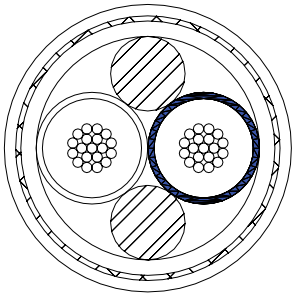
HDMI (1.3)



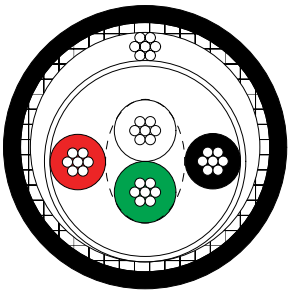
DVI



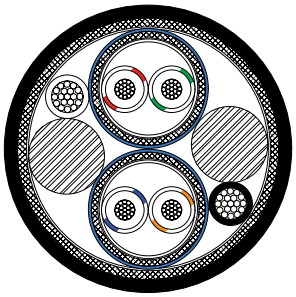
CAN Bus



USB 2.0



IEEE 1394 Firewire



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