



ABHAR WIRE + CABLE CO.




ISO 9002
Certificate No.
QS-1147HH



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Dutch Council for
Accreditation

Building Wire & Cables

Building wire & cable provides power distribution within a building.

 manufactures these cables with different construction. Flexible cables constitute a major group of these cables. They use flexible conductors. The insulation used for these cables can either be made of Rubber or PVC. The PVC itself may withstand up to 70 or 90 degrees of temperature in Celsius scale, called PVC 70 or PVC 90. They are usually made with braided copper shield or tinned copper.

Heat resistant cables are another group of these cables, which use flexible conductors and EVA or SIR as insulation material. These insulations withstands 110° C up to 180° C operating temperature resp. By use of Glass Fiber Braid sheathing over SIR the maximum temperature is increased and also the insulation layer is better protected against mechanical damages.

These wires and cables are mainly meant for indoor applications and hence they should have a small bending radius and weight. Therefore, they do not have any special mechanical protection, and they are usually laid inside conduits in order to protect them from mechanical damages.



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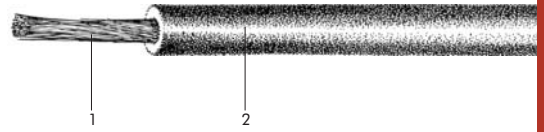


Cu/PVC

IEC 60227-3

Description:

Single core wire with fine stranded copper conductor & PVC insulation.



Number of Cores & Cross Section mm ²	Insulation Thickness mm	Wire Diameter Approx. mm	Total Weight Approx. kg/km
1 x 0.5 RF	0.6	2.1	9
1 x 0.75 RF	0.6	2.3	12
1 x 1 RF	0.6	2.5	15
1 x 1.5 RF	0.7	3.1	21
1 x 2.5 RF	0.8	3.7	33
1 x 4 RF	0.8	4.3	49
1 x 6 RF	0.8	4.7	69
1 x 10 RF	1.0	6.1	115
1 x 16 RF	1.0	7.2	168
1 x 25 RF	1.2	8.9	263
1 x 35 RF	1.2	10.1	355

1-Fine Stranded Conductor 2-PVC Insulation.





IEC 60227-3

Cu/PVC

Description:

Single core wire with copper conductor & PVC insulation.

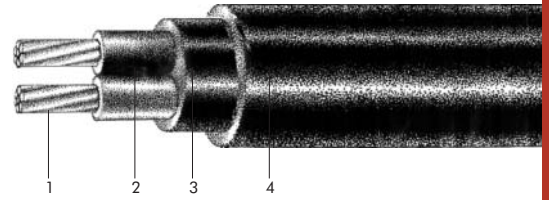
Number of Cores & Cross Section mm ²	Insulation Thickness mm	Wire Diameter Approx. mm	Total Weight Approx. kg/km
1 x 0.5 RE	0.6	2.0	8
1 x 0.75 RE	0.6	2.2	11
1 x 1 RE	0.6	2.4	14
1 x 1.5 RE	0.7	2.8	20
1 x 1.5 RM	0.7	3.1	21
1 x 2.5 RE	0.8	3.4	32
1 x 2.5 RM	0.8	3.7	33
1 x 4 RE	0.8	3.9	47
1 x 4 RM	0.8	4.3	49
1 x 6 RE	0.8	4.4	67
1 x 6 RM	0.8	4.7	69
1 x 10 RE	1.0	5.6	111
1 x 10 RM	1.0	6.1	115
1 x 16 RM	1.0	7.2	168
1 x 25 RM	1.2	8.9	263
1 x 35 RM	1.2	10.1	355

1-Solid or Stranded Circular Conductor 2-PVC Insulation.



Cu/PVC/PVC**IEC 60227-4****Description:**

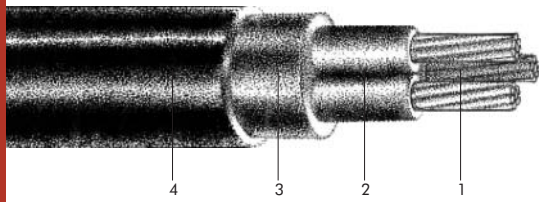
2 Core construction cable with copper conductor & PVC insulation.



Number of Cores & Cross Section mm ²	Insulation Thickness mm	Sheath Thickness mm	Cable Diameter Approx. mm	Total Weight Approx. kg/km
2 x 1.5 RE	0.7	1.2	9.1	119
2 x 1.5 RM	0.7	1.2	9.7	131
2 x 2.5 RE	0.8	1.2	10.3	162
2 x 2.5 RM	0.8	1.2	10.9	176
2 x 4 RE	0.8	1.2	11.3	211
2 x 4 RM	0.8	1.2	12.1	230
2 x 6 RE	0.8	1.2	12.3	269
2 x 6 RM	0.8	1.2	12.9	285
2 x 10 RE	1.0	1.4	15.6	440
2 x 10 RM	1.0	1.4	16.6	474
2 x 16 RM	1.0	1.4	18.0	615
2 x 25 RM	1.2	1.4	21.8	930
2 x 35 RM	1.2	1.6	24.8	1235

1-Solid or Stranded Circular Conductor 2-PVC Insulation 3-Extruded PVC Filler 4-PVC Sheathing.





IEC 60227-4

Cu/PVC/PVC

Description:

3 Core construction cable with copper conductor & PVC insulation.

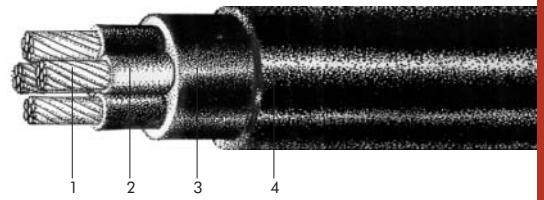
Number of Cores & Cross Section mm ²	Insulation Thickness mm	Sheath Thickness mm	Cable Diameter Approx. mm	Total Weight Approx. kg/km
3 x 1.5 RE	0.7	1.2	9.5	138
3 x 1.5 RM	0.7	1.2	10.2	152
3 x 2.5 RE	0.8	1.2	10.8	192
3 x 2.5 RM	0.8	1.2	11.5	207
3 x 4 RE	0.8	1.2	11.9	255
3 x 4 RM	0.8	1.2	12.8	276
3 x 6 RE	0.8	1.4	13.5	345
3 x 6 RM	0.8	1.4	14.1	360
3 x 10 RE	1.0	1.4	16.5	545
3 x 10 RM	1.0	1.4	17.5	578
3 x 16 RM	1.0	1.4	19.7	792
3 x 25 RM	1.2	1.6	23.6	1191
3 x 35 RM	1.2	1.6	26.3	1564

1-Solid or Stranded Circular Conductor 2-PVC Insulation 3-Extruded PVC Filler 4-PVC Sheathing.



Cu/PVC/PVC**IEC 60227-4****Description:**

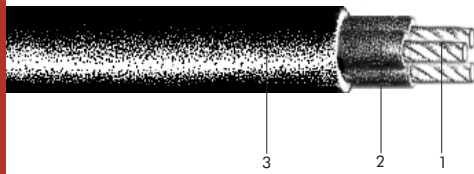
4 Core construction cable with copper conductor & PVC insulation.



Number of Cores & Cross Section mm ²	Insulation Thickness mm	Sheath Thickness mm	Cable Diameter Approx. mm	Total Weight Approx. kg/km
4 x 1.5 RE	0.7	1.2	10.3	166
4 x 1.5 RM	0.7	1.2	11.0	180
4 x 2.5 RE	0.8	1.2	11.7	231
4 x 2.5 RM	0.8	1.2	12.4	246
4 x 4 RE	1.8	1.4	13.4	323
4 x 4 RM	1.8	1.4	14.4	347
4 x 6 RE	0.8	1.4	15.0	436
4 x 6 RM	0.8	1.4	15.7	456
4 x 10 RE	1.0	1.4	17.9	668
4 x 10 RM	1.0	1.4	19.2	709
4 x 16 RM	1.0	1.4	21.4	979
4 x 25 RM	1.2	1.6	26.3	1511
4 x 35 RM	1.2	1.6	28.7	1946

1-Solid or Stranded Circular Conductor 2-PVC Insulation 3-Extruded PVC Filler 4-PVC Sheathing.





IEC 60245-7

Cu/EVA/EVA

Description:

Heat resistant, EVA insulated, EVA sheathed control cable

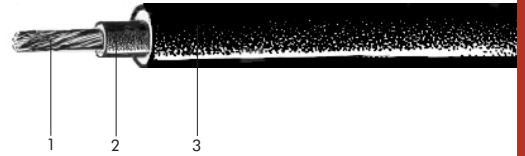
Number of Cores & Cross Section mm ²	Insulation Thickness mm	Sheath Thickness mm	Cable Diameter Approx. mm	Total Weight Approx. kg/km
3 x 0.75	0.6	0.9	6.9	72
5 x 0.75	0.6	1.0	8.4	105
7 x 0.75	0.6	1.0	9.1	140
8 x 0.75	0.6	1.1	10.3	164
10x 0.75	0.6	1.1	11.6	199
12x 0.75	0.6	1.2	12.2	231
3 x 1.0	0.6	0.9	7.3	84
5 x 1.0	0.6	1.0	8.8	123
7 x 1.0	0.6	1.1	9.8	169
8 x 1.0	0.6	1.2	11.1	198
10x 1.0	0.6	1.2	12.5	240
12x 1.0	0.6	1.2	12.9	273
3 x 1.5	0.8	1.0	8.9	125
5 x 1.5	0.8	1.1	10.8	184
7 x 1.5	0.8	1.2	12.0	253
8 x 1.5	0.8	1.2	13.4	290
10x 1.5	0.8	1.2	15.2	352
12x 1.5	0.8	1.2	16.1	417
3 x 2.5	0.9	1.1	10.5	184
5 x 2.5	0.9	1.3	13.0	278
7 x 2.5	0.9	1.4	14.4	383
8 x 2.5	0.9	1.4	16.1	437
10x 2.5	0.9	1.6	18.6	549
12x 2.5	0.9	1.6	18.9	610

1-Stranded Flexible Copper Conductor 2-EVA Insulation 3-EVA Sheathing
 Maximum conductor Temperature 110 C



Cu/EVA/EVA**IEC 60245-7****Description:**

Heat resistant, EVA insulated (double insulated) wire



Number of Cores & Cross Section mm ²	Insulation Thickness mm	Outer Diameter Approx. mm	Total Weight Approx. kg/km
0.5	0.6+0.6	3.3	17
0.75	0.6+0.6	3.5	20
1.0	0.6+0.6	3.7	23
1.5	0.6+0.6	4.0	29
2.5	0.6+0.6	4.5	41

1-Stranded Flexible Copper Conductor 2-EVA Insulation
Maximum conductor Temperature 110 C



IEC 60245-7

Cu/EVA

Description:

Heat resistant, EVA insulated wire



Number of Cores & Cross Section mm ²	Insulation Thickness mm	Outer Diameter Approx. mm	Total Weight Approx. kg/km
0.5	0.8	2.5	11
0.75	0.8	2.7	14
1.0	0.8	2.9	17
1.5	0.8	3.2	22
2.5	0.9	3.9	35
4.0	1.0	4.8	54
6	1.0	5.4	75
10	1.2	6.9	123

1-Stranded Flexible Copper Conductor 2-Heat Resistant EVA Insulation
 Maximum conductor Temperature 110 C

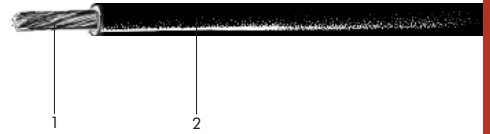


TiCu/SIR

IEC 60245-3

Description:

Heat resistant, Silicon Rubber insulated wire



Number of Cores & Cross Section mm ²	Insulation Thickness mm	Outer Diameter Approx. mm	Total Weight Approx. kg/km
0.5	0.6	2.1	9
0.75	0.6	2.3	12
1.0	0.6	2.5	14
1.5	0.7	3.0	21
2.5	0.8	3.7	33
4	0.8	4.2	50
6	0.8	4.8	71
10	1.0	6.5	125
16	1.0	7.6	181

1-Tinned Stranded Flexible Copper Conductor 2-Silicon Rubber Insulation

Maximum conductor Temperature 180 C

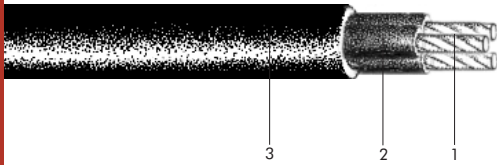


IEC 60245-3

TiCu/SIR/EVA

Description:

Heat resistant, Silicon Rubber insulated, EVA sheathed control cable



Number of Cores & Cross Section mm ²	Insulation Thickness mm	Sheath Thickness mm	Cable Diameter Approx. mm	Total Weight Approx. kg/km
3 x 0.75	0.6	1.0	6.9	80
5 x 0.75	0.6	1.2	8.4	110
7 x 0.75	0.6	1.2	9.1	144
8 x 0.75	0.6	1.2	10.3	164
10x 0.75	0.6	1.2	11.6	197
12x 0.75	0.6	1.4	12.2	235
3 x 1.0	0.6	1.0	7.5	85
5 x 1.0	0.6	1.2	9.2	128
7 x 1.0	0.6	1.2	10.0	169
8 x 1.0	0.6	1.3	11.1	193
10x 1.0	0.6	1.4	12.5	233
12x 1.0	0.6	1.4	13.3	276
3 x 1.5	0.6	1.1	8.2	109
5 x 1.5	0.6	1.2	10.0	160
7 x 1.5	0.6	1.2	10.8	213
8 x 1.5	0.6	1.4	12.4	255
10x 1.5	0.6	1.4	14.0	308
12x 1.5	0.6	1.6	14.8	364
3 x 2.5	0.6	1.2	9.5	155
5 x 2.5	0.6	1.3	11.4	229
7 x 2.5	0.6	1.4	12.6	314
8 x 2.5	0.6	1.4	14.1	359
10x 2.5	0.6	1.6	16.2	451
12x 2.5	0.6	1.6	16.8	516

1-Tinned Stranded Flexible Copper Conductor 2-Silicon Rubber Insulation 3-EVA Sheathing
 Maximum conductor Temperature 110 C

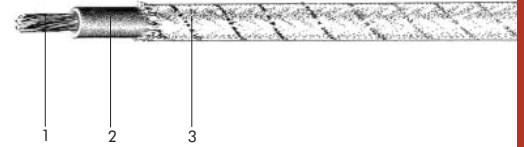


TiCu/SIR/GFB

IEC 60245-3

Description:

Heat resistant, Silicon Rubber insulated cord with impregnated glass fiber braiding



Number of Cores & Cross Section mm ²	Insulation Thickness	Outer Diameter Approx. mm	Total Weight Approx. kg/km
0.5	0.6	3.1	22
0.75	0.6	3.3	27
1.0	0.6	3.5	30
1.5	0.7	4.0	39
2.5	0.8	4.7	55
4.0	0.8	5.2	75
6	0.8	5.8	98
10	1.0	7.5	161
16	1.0	8.6	222

1-Tinned Stranded Flexible Copper Conductor 2- Silicon Rubber Insulation 3-Impregnated Glass Fiber
Maximum conductor Temperature 180 C



TECHNICAL DATA



IEC & AWC Abbreviations

Cu	Copper
Al	Aluminium
AA	Aluminium Alloy
TiCu	Tinned Copper
SiCu	Silver Coated copper
RM	Stranded Circular
SM	Shaped Stranded
SE	Shaped Solid
RE	Solid Circular
RF	Flexible Circular
RMS	Stranded Segmental (Milliken)
CTS	Copper Tape Screen
CWS	Copper Wire Screen
CuB	Copper Wire Braided Screen
ICTS	Individual Copper Tape Screen
ICWS	Individual Copper Wire Screen
ISCR	Individual Screen Formed by Polyester + Tinned Drain Wire + Aluminium Backed Polyester + Polyester
ISCRC	Individual Screen Formed by Polyester + Tinned Drain Wire + Copper Backed Polyester + Polyester
OSCR	Overall Screen Formed by Polyester + Tinned Drain Wire + Aluminium Backed Polyester
OSCRC	Overall Screen Formed by Polyester + Tinned Drain Wire + Copper Backed Polyester
TCB	Tinned Copper Wire Braided Screen
CW	Communication Wire
ATA	Double Aluminium Tape Armour
STA	Double Galv. Steel Tape Armour
AWA	Aluminium Wire Armour
AWAT	Aluminium Wire Armour + Counter Helix
SWA	Galv. Steel Wire Armour
SWAT	Galv. Steel Wire Armour + Counter Helix
SSWA	Stainless Steel Wire Armour
DAWA	Double Aluminum Wire Armour
DSWA	Double Galv. Steel Wire Armour
TCWA	Tinned Copper Wire Armour
AWB	Aluminium Wire Braided
SWB	Galv. Steel Wire Braided
BWB	Bronze Wire Braided
SSWB	Stainless Steel Wire Braided
LSh	Lead Sheath
AIPE	Aluminium Copolymer Coated



Bd	Bedding
BT	Brass tape
BHT	Bituminized Hessian Tape
BPT	Bitumen Coated Paper Tape
BdT	Bedding Tape (PVC or PE)
BrT	Bronze Tape
MGT	Mica Glass Tape
PPT	Polypropylene Tape
SCT	Semi Conductive Tape
WBT	Water Blocking Tape
Pet	Polyester Tape (Mylar)
SCWBT	Semi-Conductive Water Blocking Tape
PPY	Polypropylene Yarn
WBY	Water Blocking Yarn
SCYF	Semi-conductive Yarn Filler
GC	Graphite Coating
GFB	Glass Fiber Braided
FPE	Foamed Polyethylene (Cellular)
TPU	Thermoplastic Polyurethane
SC	Ext. Polymer Semi Conductive
TPE	Thermoplastic Elastomer
PVC	Polyvinylchloride
XLPE	Cross Linked Polyethylene
SIR	Silicone Rubber
PE	Polyethylene
EVA	Ethylene Vinyl Acetate
XEVA	Cross Linked EVA
HDPE	High Density Polyethylene
HEPR	Hard Grade Ethylene Propylene Rubber
LDPE	Low Density Polyethylene
MDPE	Medium Density Polyethylene
LSFOH	Low Smoke Flame Retardant Zero Halogen
EPR	Ethylene Propylene Rubber
PVCE	High Temperature PVC (90°C)
PVCH	High temperature Sheathing Compound equal to IEC ST2 ,VDE YM5 (90°C)
APVC	Anti Termite PVC
APVCE	Anti Termite High Temperature PVC (90°C)
APVCH	Anti Termite & High Temperature Sheathing Compound equal to IEC ST2 ,VDE YM5 (90°C)
XPVC	Cross Linked PVC
OPVC	Oil, Acid & Hydrocarbon Resistance Sheathing Compound
OPVCH	Oil Resistant & High Temperature Sheathing Compound equal to IEC ST2 ,VDE YM5 (90°C)

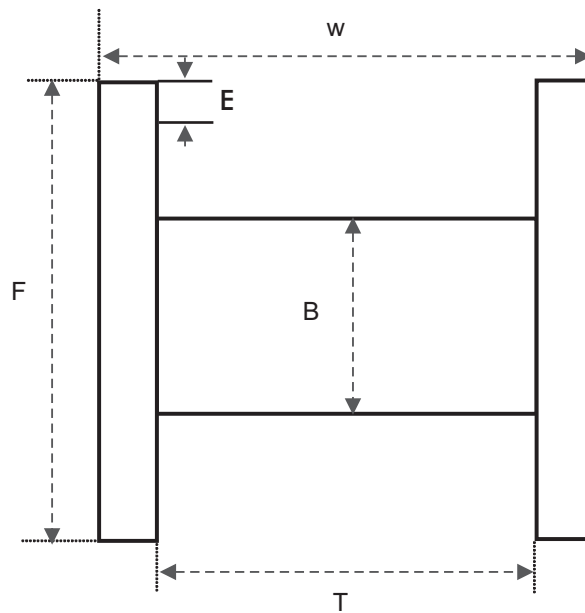


Max Cable length in meters on standard drums

Drum Sizes															
Cable Dia.mm	6	8	10	12	14	16	18	20	22	24	26	30	Cable Dia.mm		
6	1326	3961											6		
7	975	2910											7		
8	746	2228	4391										8		
9	590	1760	3470										9		
10	478	1426	2810	4566									10		
11	395	1178	2323	3774									11		
12	332	990	1952	3171	4912								12		
13	283	844	1663	2702	4185								13		
14		727	1434	2330	3609	4934							14		
15		634	1249	2029	3144	4298							15		
16		557	1098	1784	2763	3777							16		
17		493	972	1580	2448	3346	4858						17		
18		440	867	1409	2183	2985	4333	4643					18		
19		395	778	1265	1959	2679	3889	4167	4722				19		
20		356	703	1142	1768	2417	3510	3760	4262				20		
21		323	637	1035	1604	2193	3183	3411	3866				21		
22		295	581	943	1461	1998	2901	3108	3522	4815			22		
23		270	531	863	1337	1828	2654	2843	3223	4406			23		
24			488	793	1228	1679	2437	2611	2960	4046			24		
25			450	731	1132	1547	2246	2407	2728	3729			25		
26			416	675	1046	1430	2077	2225	2522	3448			26		
27			386	626	970	1326	1926	2063	2338	3197			27		
28			358	582	902	1233	1791	1919	2174	2973			28		
29			334	543	841	1150	1669	1789	2027	2771	4826		29		
30			312	507	786	1074	1560	1671	1894	2590	4510		30		
31			292	475	736	1006	1461	1565	1774	2425	4224		31		
32			274	446	691	944	1371	1469	1665	2276	3964		32		
33				419	650	888	1289	1381	1565	2140	3727	4999	33		
34				395	612	836	1214	1301	1475	2016	3511	4709	34		
35				373	577	789	1146	1228	1392	1903	3313	4444	35		
36				352	546	746	1083	1161	1315	1798	3132	4200	36		
37				334	517	706	1026	1099	1245	1702	2965	3976	37		
38				316	490	670	972	1042	1181	1614	2811	3770	38		
39				300	465	636	923	989	1121	1532	2669	3579	39		
40				285	442	604	877	940	1065	1457	2537	3402	40		
41				272	421	575	835	895	1014	1386	2415	3238	41		
42				259	401	548	796	853	966	1321	2301	3086	42		
43					383	523	759	814	922	1260	2195	2944	43		
44					365	499	725	777	881	1204	2097	2812	44		
45					349	478	693	743	842	1151	2004	2688	45		
46					334	457	663	711	806	1101	1918	2573	46		
47					320	438	636	681	772	1055	1837	2464	47		
48					307	420	609	653	740	1012	1762	2363	48		
49					295	403	585	626	710	971	1691	2267	49		
50					283	387	562	602	682	932	1624	2178	50		
51					272	372	540	578	655	896	1561	2093	51		
52					262	358	519	556	630	862	1501	2013	52		
53					252	344	500	535	607	830	1445	1938	53		
54						332	481	516	585	799	1392	1867	54		
55						320	464	497	564	770	1342	1800	55		
56						308	448	480	544	743	1294	1736	56		
57						298	432	463	525	717	1249	1676	57		
58						287	417	447	507	693	1207	1618	58		
59						278	403	432	490	670	1166	1564	59		
60						269	390	418	474	647	1127	1512	60		
61						260	377	404	458	626	1091	1463	61		
62							252	365	391	443	606	1056	1416	62	
63								354	379	430	587	1023	1372	63	
64								343	367	416	569	991	1329	64	
65								332	356	403	552	961	1288	65	
66								322	345	391	535	932	1250	66	
67								313	335	380	519	904	1213	67	
68								304	325	369	504	878	1177	68	
69								295	316	358	490	853	1143	69	
70								287	307	348	476	828	1111	70	
71								278	298	338	462	805	1080	71	
72								271	290	329	450	783	1050	72	
73								263	282	320	437	762	1022	73	
74								256	275	311	426	741	994	74	
75								250	267	303	414	722	968	75	
76									260	295	403	703	942	76	
77									254	288	393	685	918	77	
78										280	383	667	895	78	
79										273	373	650	872	79	
80										266	364	634	851	80	
81										260	355	619	830	81	
82											254	347	810	82	
83												338	589	790	83
84												330	575	772	84
85												323	562	753	85
86												315	549	736	86
87												308	536	719	87
88												301	524	703	88
89												294	512	687	89
90												288	501	672	90
91												281	490	657	91
92												275	480	643	92
93												269	469	629	93
94												264	459	616	94
95												258	450	603	95
96												253	440	591	96
97													431	579	97
98													423	567	98
99													414	555	99
100													406	544	100



Drum size	Flange Dia. F	Barrel Dia. B	Traverse T	Width overall W	Drum weight Kg
6	600	300	400	430	20
8	800	350	520	600	30
10	1000	450	620	700	50
12	1200	600	720	820	70
14	1400	700	790	920	125
16	1600	900	900	1028	175
18	1800	1100	1120	1248	290
20	2000	1200	1120	1248	330
22	2200	1400	1120	1248	450
24	2400	1600	1370	1570	595
26	2600	1600	1700	1900	645
30	3000	2000	1900	2100	770



$$L_T = \frac{\pi NP (B + PD)}{1000}$$

$$P = \frac{F - B - 2E}{2D}$$

$$N = 0.95 \frac{T}{D}$$

L_T = Length of Cable (m)

F = Flange Dia. (mm)

B = Barrel Dia. (mm)

D = Cable Dia. (mm)

T = Traverse (mm)

E = Empty Space (mm)

