

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

Manufacturer	TELDOR Cables & Systems
Address	Kibbutz Ein-Dor, 1933500, Israel
Place of Production	TELDOR Cables & Systems Kibbutz Ein-Dor, 1933500, Israel
Type	fiber optical cable
Description	Teldor MG Fiber Optic cables for Marine / Oil / Gas / Offshore applications, Single or Multi loose tube or Multi tight buffered, Flame retardant, Fire Resistance (optional), Low smoke, Zero Halogens, FR-LSZH/HFFR, Armored/ Non-armored, Single mode / Multi mode / Step index fibers jacketed with SHF1 or SHF2 or MUD resistance (NEK 606) jacket types.
Trade Name	Teldor MG
Application	Fiber Optic cables for Marine and Offshore applications
Specified Standard	IEC 60793-2-10:2019, IEC60793-2-50:2018, IEC 60794-series: 2021, IEC 60092-350:2020, IEC 60092-360:2021, IEC 60754-1/2:2019, IEC 61034-1/2:2019, IEC 60332-1-1/2/3:2015, IEC 60332-3-22:2018, IEC60332-3-24:2018, BS 6387:2013, IEC 60331-1:2018, IEC 60331-2:2018, IEC60331-25:1999, NEK 606:2016; ISO/IEC 11801:2017, ANSI/TIA/EIA568:2016, CSA 22.2No. 03:2009 (Cold bend, Cold

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Impact), SOLAS Amendments chapter II-1, Part D, Reg.45, 5.2.

Ratings

Details see certificate appendix

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register Classification Society (China) Co Ltd of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document LR21326592TA and its supplementary Type Approval Terms and Conditions form part of this Certificate.

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Appendix

SPECIAL PROPERTIES:

Halogen free per IEC 60754-1/2, Flame retardant per IEC 60332-3-22 (cat.A), 60332-3-24 (cat.C), IEC 60332-1-1/2/3, IEC 60332-2, Low Smoke per IEC 61034-1/2, Armor/Non-Armor, Fire resistant per IEC 60331-25 (Optional), Fire resistant per BS6387 with water spray and mechanical shock (armored cables, optional), Various fiber types (SM, MM and special), Various construction types (Tight buffers, Breakout, Single loose tube, Multi loose tube), Dry and Gel filled tubes, Various Jacket types (SHF1, SHF2, SHF2-MUD resistant per NEK606), Designed for marine and offshore application, Oil resistant Designed for harsh conditions

DETAILED DESCRIPTION:

Fiber types :	<ul style="list-style-type: none"> Step index Single mode Multi mode Special fiber (per specific data sheet)
Construction:	<ul style="list-style-type: none"> MTD - Tight buffered (Multi-distribution cables) BO - Tight buffered (BreakOut cables) Gel filled Loose tube (Single or multi loose tube cables) Dry Loose tube (Single or multi loose tube cables) Combination of tight buffered and loose tubes)
Central strength member (opt.) :	<ul style="list-style-type: none"> Metalic strength member Dielectric strength member
Peripheral strength member (opt):	<ul style="list-style-type: none"> Glass Yarns Aramid yarns
Inner Sheath:	<ul style="list-style-type: none"> SHF1 SHF2 SHF2-MUD Resistance (NEK606)
Aarmor:	<ul style="list-style-type: none"> Braided galvanized steel wire Corrugated steel tape Served (Galvanized) steel wire Bronze wire braid Copper wire braid Tinned copper wire braid
Outer Sheath:	<ul style="list-style-type: none"> SHF1 SHF2 SHF2-MUD Resistance (NEK606) (Sheath can be made from single or double layer)

Water Blocking (opt.):

Swellable Yarns
Swellable tapes
Gel

Fire Resistance (opt.):

Fire resistance tapes

Typical performance of common fibers

Fiber Code	Units	3	4	5	6	7	8	9	A
Standard Designation		Multimode				Singlemode			
ISO/IEC 11801		OM4	OM3	OM2	OM1	-	-	OS2	-
ANSI/TIA/EIA-492		AAAD	AAAC	AAAB	AAAA	-	-	-	-
IEC 60793-2-10		A1a.3	A1a.2	A1a.1	A1b	-	-	-	-
ITU-T		-	-	-	-	G.657.A2	G.655	G.652.D	G.657.A1
IEC 60793-2-50		-	-	-	-	B6_a2	B4	B1.3	B6_a1
Operating wavelength	nm	850 1300				1310 1550 1625	1550 1625	1310 1550 1625	
Core diameter	µm	50±2.5	50±2.5	50±2.5	62.5±3	-	-	-	-
MFD @1310nm	µm	-	-	-	-	8.6±0.4	-	9.2±0.4	8.6±0.4
MFD @1550nm	µm	-	-	-	-	9.6±0.5	9.6±0.6	10.4±0.6	9.8±0.5
Cladding diameter	µm	125±1			125±2	125±0.7			
Coating diameter	µm	245±10				245±5			
Max. Attenuation Tight-buffer	dB/Km	3.0 @850nm 1.0 @1300nm			3.5 @850nm 1.0 @1300nm	0.40@1310nm 0.30 @1550nm	-	0.40@1310nm 0.30 @1550nm	
Max. Attenuation Loose-tube	dB/Km	2.8 @850nm 0.9 @1300nm			3.2 @850nm 1.0 @1300nm	0.35 @1310nm 0.22 @1550nm 0.25 @1625nm	0.22 @1550nm 0.26 @1625nm	0.35 @1310nm 0.22 @1550nm 0.25 @1625nm	

APPLICATION LIMITATION

Operation temperature: -40°C to +85°C

Storage temperature: -40°C to +85°C

Installation temperature: -30°C to +50°C