船用光缆 Marine Fiber Optic cable

QFCU-FR

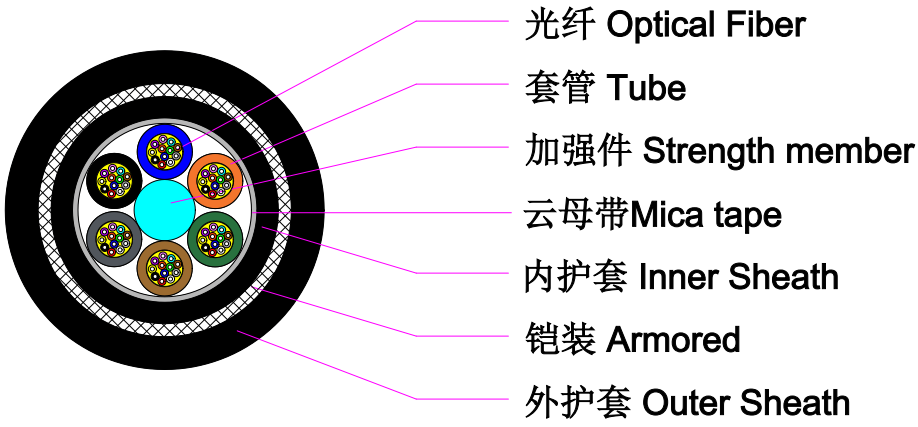
HF Flame Oil Cold UV Fire

应用 Application

本规范涵盖了船舶和移动海上平台通信和设备中使用的耐火光缆的要求。

This specification covers the requirements for fire resistance optical cables used in communication and equipment of ships and mobile offshore platforms.

结构 Construction



光纤 Fiber	松套光纤	Loose tube fiber
套管 Tube	PBT	PBT
加强件 Strength Member	钢丝	Steel wire
包带 Tape	耐火云母带	Fire-resistant Mica tape
内护套 Inner Sheath	SHF1	SHF1
铠装 Armored	镀锌钢丝编织，覆盖率≥90%	Galvanized Steel Wire Braid，Coverage≥90%
外护套 Outer Sheath	SHF2 颜色：黑色或定制	SHF2 Color ： Black or as customer's request
印字 Marking	Hysin □ MARINE □ Cable □ QFCU □ FR □ (No of fibers) □ (fiber type) □ IEC60331-2 □ IEC60332-3-22□****m□xxxxxx□WW/YY 注：□ 表示空格；****m 表示计米；xxxxxx 表示批号;WW/YY 表示周数/年份 Note：□ means blank；****m means meters；xxxxxx means batch number；WW/YY means week/year	

光纤性能 Optical Characteristics

光纤类型 Fiber Type		SM 9/125 OS2 B1.3	MM 62.5/125 OM 1 A1b	MM 50/125 OM 2 A1a	MM 50/125 OM 3 A1a.2	MM 50/125 OM 4 A1a.3	MM 50/125 OM 5 A1a.4
纤芯直径 Core Diameter(μm)		9.2 ±.0.4	62.5 ± 2.5	50 ± 2.5	50 ± 2.5	50 ± 2.5	50 ± 2.5
衰减系数 Attenuation (dB/km)	@1310 nm	<0.40	-	-	-	-	-
	@1550 nm	<0.30	-	-	-	-	-
	@ 850 nm	-	<3.00	<3.00	<3.00	<3.00	<3.00
	@ 1300 nm	-	<1.00	<1.00	<1.00	<1.00	<0.70
带宽 Bandwidth (MHz*km)	@ 850 nm	-	>200	>500	>1500	>3500	>3500
	@ 1300 nm	-	>500	>500	>500	>500	>500
光纤容量 Fiber capacity 1GBase	SR 1310nm	10000m	-	-	-	-	-
	LX 1550nm	40000m	-	-	-	-	-
	SX 850nm	-	275 m	550 m	1000 m	1100 m	-
光纤容量 Fiber capacity 10GBase	SR 850nm	-	33 m	82 m	300 m	550 m	550 m
光纤容量 Fiber capacity 40GBase	SR 850nm	-	-	-	100 m	150 m	440m
光纤容量 Fiber capacity 100GBase	SR 850nm	-	-	-	-	-	150 m
Proof test(kpsi)		>100	>100	>100	>100	>100	>100

性能 Performances

衰减	Attenuation	IEC60793-1-40 & IEC60794-2
机械物理性能	Mechanical and particular characteristic	IEC60092-360
抗拉强度	Tensile strength	IEC60794-1-2 E1
抗压	Crush	IEC60794-1-2 E3
冲击	Impact	IEC60794-1-2 E4
扭转	Torsion	IEC60794-1-2 E7
弯曲	Cable bend	IEC60794-1-2 E11
阻燃性	Flame resistance	IEC 60332-3-22 Cat A
耐火性	Fire resistance	IEC 60331-25 / IEC 60331-2
耐油	Oil resistance (SHF2)	IRM902, 100℃×24H
卤酸气体	Acid Gas Release Mounts	≤5mg/g （IEC 60754-1）
燃烧气体 PH 值	Burning Occur Gas Acidity	PH≥4.3 （IEC 60754-2）
抗紫外线	UV resistance	UL1581
抗张强度 长期/短期	Tensile Strength Long/Short Term	600/1500 N
抗压性 长期/短期	Crush Resistance Long/Short Term	1000/3000 N/100mm

光纤套管 Fiber tube

光纤套管材料为 PBT 复合挤出层，套管内填充有阻水填充化合物。

The tube material is PBT compound extrusion layer，The tube are filled with a water-resistant filling compound.

光纤芯数 Fiber cores	2	4	6	8	12	16	24	48	60	72	84	96
每管中芯数 Number of fibers in each tube	2	2	2	2	2	4	4	8	12	12	12	12
光纤颜色 Color of fibers	BL OR	BL OR	BL OR	BL OR	BL OR	BL OR GR BR	BL OR GR BR	BL/OR GR/BR SL/WH RD/BK	BL/OR GR/BR SL/WH RD/BK YL/VI RS/AQ	BL/OR GR/BR SL/WH RD/BK YL/VI RS/AQ	BL/OR GR/BR SL/WH RD/BK YL/VI RS/AQ	BL/OR GR/BR SL/WH RD/BK YL/VI RS/AQ
套管颜色 Color of tubes	BL	BL OR	BL/OR GR	BL/OR GR/BR	BL/OR GR/BR SL/WH	BL/OR GR/BR	BL/OR GR/BR SL/WH	BL/OR GR/BR SL/WH	BL/OR GR/BR SL	BL/OR GR/BR SL/WH	BL/OR GR/BR SL/WH RD	BL/OR GR/BR SL/WH RD/BK

※ The color comply with TIA-568/TIA-598

BL-Blue,OR-Orange,GR-Green,BR-Brown,SL-Slate,WH-White,RD-Red,BK-Black,YL-Yellow,VI-Violet,RS-Rose,AQ-Aqua

※The other color of fiber may be applicable when purchaser required.

技术参数 Technical Parameters

Type 型号	Fiber Count 光纤芯数	Inner sheath Diameter 内护套外径 （mm）	Armored 铠装 Braid wire 编织丝外径 (mm)	Bending Radius Static/Dynamic 弯曲半径 静态/动态 (mm)	Outer sheath thickness 外护套厚度 （mm）	Outer Diameter 外护套外径 （mm）
QFCU-FR	2~10、16	7.5±0.8	0.2	10D/20D	≥1.0	10.5±1.0
	12~48	8.0±0.8	0.2	10D/20D	≥1.0	11.0±1.0
	50~72	9.0±0.8	0.2	10D/20D	≥1.0	12.0±1.0
	74~96	10.5±0.8	0.2	10D/20D	≥1.0	14.0±1.0

FR： is Fire-resisting、Flame retardant、Low Smoke、Zero Halogen