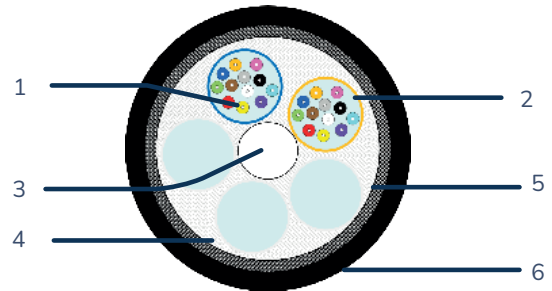


# KFOxxxxMTAZH

Multitube Armored Optical Fiber Cable for Indoor and Outdoor Use - LSZH



- 1. Optical fiber 250microns
- 2. PBT tube filled with sealing gel
- 3. Central reinforcement and filling elements
- 4. Fiberglass protection
- 5. Corrugated steel armor
- 6. LSZH jacket (Black RAL 9005 or other colors)

## UNIK

- ✓ Compliant with ISO 11801 and IEC 60794 standards
- ✓ Excellent waterproofing and UV resistance
- ✓ Steel armor provides anti-rodent protection
- ✓ LSZH Eca jacket (CPR EN50575 certified)

## THE PURPOSE

This fiber optic cable provides a high-performance solution for data transmission while offering enhanced protection against, rodents, water ingress, UV exposure. The cable can contain up to 144 optical fibers, each protected by a color-coded PBT tube for easy identification. The tubes are filled with thixotropic water-blocking gel, ensuring optimal moisture protection. To reinforce the structure, the tubes are SZ-stranded around a central strength member, with additional filling elements as needed. Fiberglass filaments and a dry swelling material are added to prevent any water penetration. A corrugated steel strip provides protection against physical damage, followed by an LSZH outer sheath that is UV-resistant for long-term durability and fire-resistant for indoor use.

## COMPLIANCE

Cable Standard	System	Applications
IEC 601793 B1.3 Singlemode	ISO/IEC 11801-1:2017 OS2, OM3	From 1G to 400G
IEC 601793 A1 Multimode	or OM4	

## THE STRUCTURE

- Optical fiber:** 9/125 OS2 / G652D - 50/125 OM3/OM4
- Tube :** Made of PBT, filled with sealing gel, can contain up to 14 optical fibers (2-12 FO: 2.1 mm)
- Fiberglass protection :** Water-blocking fiberglass yarns
- Assembly:** SZ-stranded around a central strength member with swelling tape
- A armor :** Corrugated steel
- Jacket :** LSZH HFFR-UV Black RAL9005 or other colors
- Marking :** UNIKKERN OPTICAL FIBER xx FO ZZZ x/125 MULTITUBE ARMORED LSZH Eca Certified SGS 21WWYY xxxxxxM



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## THE STRUCTURE

Fiber identification according to the following code: IEC 304

Nbr	1	2	3	4	5	6	7	8	9	10	11	12
Colors												
	Blue	Orange	Green	Brown	Grey	White	Red	Black	Yellow	Violet	Pink	Aqua

From 13 to 24, the colors remain the same but with an additional black stripe.

Tube identification according to the following code: IEC 304

Nbr	1	2	3	4	5	6	7	8	9	10	11	12
Colors												
	Blue	Orange	Green	Brown	Grey	White	Red	Black	Yellow	Violet	Pink	Aqua

## PURCHASE INFO

Nb of Fiber	Nb of Tube	Perf	References	Diameter (nom)	Weight (Kg)	Crush Resistance (N/100mm)	Tensile Strength (N)	Packing
24	2	OS2	KFO24OS2MTAZH	12.0mm	140	3000 long term 4000 short term	2000 long term 3600 short term	D4000M
48	4	OS2	KFO48OS2MTAZH	12.0mm	140	3000 long term 4000 short term	2000 long term 3600 short term	D4000M
72	6	OS2	KFO72OS2MTAZH	12.0mm	140	3000 long term 4000 short term	2000 long term 3600 short term	D4000M
96	8	OS2	KFO96OS2MTAZH	14.0mm	180	3000 long term 4000 short term	2000 long term 3600 short term	D4000M
144	12	OS2	KFO144OS2MTAZH	18.0mm	220	3000 long term 4000 short term	2000 long term 3600 short term	D4000M



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## TECHNICALITIES

### OS2 Performances (G652D)

MODE FIELD DIAMETER @1310NM	9.2±0.4µM
MODE FIELD DIAMETER @1550NM	10.4±0.5µM
CLADDING DIAMETER	125.0± 1µM
CORE CONCENTRICITY ERROR	≤0.6µM
CLADDING NON-CONCIRCULARITY	≤ 1.0%
COATING DIAMETER	245±10µM (BEFORE COLORED)
	250±15µM (COLORED)
COATING/CLADDING CONCENTRICITY ERROR	≤12µM
CABLE CUTOFF WAVELENGTH	≤1260 nM
POINT DISCONTINUITY	≤0.05DB
ATTENUATION COEFFICIENT @ 1310 NM	≤0.36DB/KM
@ 1383 NM	≤0.36DB/KM
@ 1550 NM	≤0.22DB/KM
@ 1625NM	≤0.24DB/KM
MACRO-BEND INDUCED ATTENUATION	
100 TURNS, 30MM RADIUS @1550N/1625M	≤0.05DB
PMD	
MAX. INDIVIDUAL FIBER	≤0.2 PS/KM <sup>1/2</sup>
PMDQ	≤0.1 PS/KM <sup>1/2</sup>
ZERO-DISPERSION WAVELENGTH	1300 ~ 1324 NM
ZERO-DISPERSION SLOPE	≤ 0.092 PS/(NM <sup>2</sup> .KM)
CHROMATIC DISPERSION COEFFICIENT	
@ 1288-1339 NM	≤3.5PS/(NM. KM)
@ 1271-1360NM	≤5.3PS/(NM. KM)
@ 1550 NM	≤18PS/(NM. KM)
@ 1625 NM	≤22PS/(NM. KM)
PROOF TEST LEVEL	100 KPSI (0.69 GPA), 1% STRAIN
COATING STRIP FORCE(Peak Value)	1.3~8.9N
FIBER CURL (RADIUS)	<sup>3</sup> 4 M



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## TECHNICALITIES

### MULTIMODE FIBERS common Performances

CORE DIAMETER	50 ± 2.5 µM
CORE NON-CIRCULARITY	≤ 5%
CORE-CLADDING CONCENTRICITY ERROR	≤ 1.5 µM
CLADDING DIAMETER	125 ± 1.0 µM
CLADDING NON-CIRCULARITY	≤ 1%
COATING DIAMETER	242 ± 7 µM
COATING NON-CIRCULARITY	≤ 5%
COATING-CLADDING CONCENTRICITY ERROR	≤ 10%
ATTENUATION COEFFICIENT AT 850 NM	≤ 2.4 DB/KM
ATTENUATION COEFFICIENT AT 1300 NM	≤ 0.6 DB/KM
MACROBENDING LOSS MANDREL RADIUS = 7.5 MM, 2 TURNS MANDREL RADIUS = 15 MM, 2 TURNS MANDREL RADIUS = 37.5 MM, 100 TURNS	≤ 0.2 / ≤ 0.5 DB ≤ 0.1 / ≤ 0.3 DB ≤ 0.5 / ≤ 0.5 DB
PEAK COATING STRIP FORCE, UNAGED AND AGED	1.3 ≤ FPEAK-STRIP ≤ 8.9 N

### OM3 Specific performances

BANDWIDTH (OFL) OVERFILLED MODAL BANDWIDTH AT 850 NM OVERFILLED MODAL BANDWIDTH AT 1300 NM	≥ 1500 MHZ.KM ≥ 500 MHZ. KM
BANDWIDTH (EMB) EFFECTIVE MODAL BANDWIDTH AT 850 NM	≥ 2000 MHZ.KM

### OM4 Specific performances

BANDWIDTH (OFL) OVERFILLED MODAL BANDWIDTH AT 850 NM OVERFILLED MODAL BANDWIDTH AT 1300 NM	≥ 3500 MHZ.KM ≥ 500 MHZ. KM
BANDWIDTH (EMB) EFFECTIVE MODAL BANDWIDTH AT 850 NM	≥ 4700 MHZ.KM

