

# FIBRE OPTIC CABLES

## MICRO singlemode

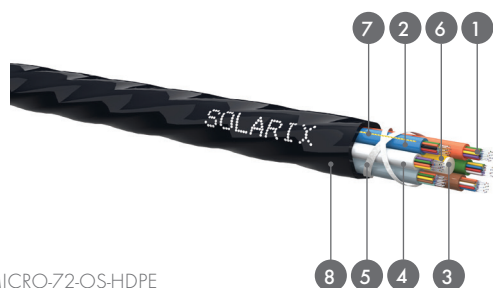
SXKO-MICRO-144-OS-HDPE



Outer jacket	<b>HDPE, reaction to fire F<sub>ca</sub></b>
Cable secondary protection	<b>gel-filled tube</b>
Cable type acc. to the number of tubes	<b>MLT</b>
Operating temperature	<b>-30 to +70 °C</b>
Installation temperature	<b>-15 to +50 °C</b>
Storage temperature	<b>-4 to +70 °C</b>
Fibre type	<b>G.657A1</b>
Diameter of the primary protection	<b>12-96f: 250 µm, 144f: 200 µm</b>
Short-term tensile resistance	<b>12-60f: 430 N, 72f: 900 N, 96f: 1 500 N, 144f: 900 N</b>
Short-term pressure resistance	<b>12-96f: 700 N/10 cm, 144f: 500 N/10 cm</b>
Minimum bend radius (short term)	<b>15x D cable</b>
Minimum bend radius (long-term)	<b>20x D cable</b>
Cable diameter	<b>12-60f: 5,3 mm, 72f: 5,7 mm, 96f: 6,5 mm, 144f: 5,8 mm</b>
Cable weight	<b>12f: 19 kg/km, 24f: 21 kg/km, 48f: 23 kg/km, 60f: 24 kg/km, 72f: 29 kg/km, 96f: 41 kg/km, 144f: 31 kg/km</b>
The number of fibres in the tube	<b>12-96f: 12, 144f: 24</b>

Solarix MICRO air blow-in fibre optic cables SXKO-MICRO-OS-HDPE reaction to fire F<sub>ca</sub> are suitable for blowing into micro tubes and HDPE tubes thanks to the high viscosity HDPE jacket that allows the cable to slide easily along the inner side of the tube. The fibres themselves are stored in a gel-filled tube to protect them from moisture. There are 12 fibres stored in each tube in the 12-96f version and 24 fibres in the 144f version. The primary fibre protection used has a standard diameter of 250 µm, and reduced protection of 200 µm for 144f cable. The fibre optic cable has no metallic elements and is fully dielectric. The fibre itself is of the G.657A1 type.

Part No.	Description
SXKO-MICRO-12-OS-HDPE	Air blow-in cable MICRO Solarix 12f 9/125, HDPE, black
SXKO-MICRO-24-OS-HDPE	Air blow-in cable MICRO Solarix 24f 9/125, HDPE, black
SXKO-MICRO-48-OS-HDPE	Air blow-in cable MICRO Solarix 48f 9/125, HDPE, black
SXKO-MICRO-72-OS-HDPE	Air blow-in cable MICRO Solarix 72f 9/125, HDPE, black
SXKO-MICRO-96-OS-HDPE	Air blow-in cable MICRO Solarix 96f 9/125, HDPE, black
SXKO-MICRO-144-OS-HDPE	Air blow-in cable MICRO Solarix 144f 9/125, HDPE, black



- Cable construction
1. Fibres
  2. Gel-filled tube
  3. Strength member
  4. Filling tube
  5. Water-proof tape
  6. Aramid yarn
  7. Rip cord
  8. Outer jacket

SXKO-MICRO-72-OS-HDPE



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# FIBRE OPTICS

## Optical Fibres Parameters

### Singlemode Fibres Basic Parameters

Geometric Parameters	Unit	ITU-T G.652.D	ITU-T G.657.A1	ITU-T G.657.A2
<b>Mode Field Diameter (MFD)</b>				
@ 1 310 nm	µm	9,2 ± 0,4	8,9 ± 0,4	8,6 ± 0,4
@ 1 550 nm	µm	10,4 ± 0,5	10,1 ± 0,5	9,6 ± 0,4
Cladding diameter	µm	125 ± 0,7	125 ± 0,7	125 ± 0,7
Coating diameter - fiber 200 µm	µm	242 ± 5,0 (uncolored)	242 ± 5,0 (uncolored) 185 ± 5,0 (uncolored)	242 ± 5,0
Core-Cladding Concentricity Error	µm	≤ 0,5	≤ 0,5	≤ 0,5
Cladding-Coating Concentricity Error	µm	≤ 12	≤ 12	≤ 12
<b>Transmission Parameters</b>				
<b>Attenuation</b>				
@ 1 310 nm	dB/km	0,32 - 0,36 <sup>1)</sup>	0,32 - 0,36 <sup>1)</sup>	0,32 - 0,36 <sup>1)</sup>
@ 1 550 nm	dB/km	0,19 - 0,24 <sup>1)</sup>	0,19 - 0,24 <sup>1)</sup>	0,19 - 0,24 <sup>1)</sup>
@ 1 625 nm	dB/km	0,22 - 0,26 <sup>1)</sup>	0,22 - 0,26 <sup>1)</sup>	0,22 - 0,26 <sup>1)</sup>
<b>Dispersion Coefficient</b>				
@ 1 550 nm	ps/(nm*km)	≤ 18	≤ 18	≤ 18
@ 1 625 nm	ps/(nm*km)	≤ 22	≤ 22	≤ 22
PMD individual fibre	ps/√km	0,1	0,1	0,1
Cable Cutoff Wavelength λ <sub>cc</sub>	nm	≤ 1 260	≤ 1 260	≤ 1 260
Fibre Cutoff Wavelength λ <sub>c</sub>	nm	1 150 - 1 330	1 150 - 1 330	1 150 - 1 330

<sup>1)</sup> A typical value for fibres in loose tube cables.

### Multimode Fibres Basic Parameters

Geometric Parameters	Unit	ITU-T G.651.1 OM2	ITU-T G.651.1 OM3	ITU-T G.651.1 OM4	ITU-T G.651.1 OM5
Core diameter	µm	50 ± 2,5	50 ± 2,5	50 ± 2,5	50 ± 2,5
Cladding diameter	µm	125 ± 1,0	125 ± 1,0	125 ± 1,0	125 ± 1,0
Core-Cladding Concentricity Error	µm	≤ 1,5	≤ 1,0	≤ 1,0	≤ 1,0
Cladding-Coating Concentricity Error	µm	≤ 10,0	≤ 10,0	≤ 10,0	≤ 10,0
<b>Transmission Parameters</b>					
Numerical aperture	-	0,200 ± 0,015	0,200 ± 0,015	0,200 ± 0,015	0,200 ± 0,015
<b>Attenuation</b>					
@ 850 nm	dB/km	2,2 - 3,5 <sup>1)</sup>	2,2 - 3,5 <sup>1)</sup>	2,2 - 3,5 <sup>1)</sup>	2,2 - 3,0 <sup>1)</sup>
@ 1 300 nm	dB/km	0,5 - 1,5 <sup>1)</sup>	0,5 - 1,5 <sup>1)</sup>	0,5 - 1,5 <sup>1)</sup>	0,5 - 1,5 <sup>1)</sup>
<b>Bandwidth</b>					
@ 850 nm	MHz*km	≥ 500	≥ 1 500	≥ 3 500	≥ 3 500
@ 953 nm	MHz*km	-	-	-	≥ 1 850
@ 1 300 nm	MHz*km	≥ 500	≥ 500	≥ 500	≥ 500

<sup>1)</sup> A typical value for fibres in loose tube cables.

# FIBRE OPTICS

## Color Coding for Fibres and Tubes

### Fibres Color Coding

Fibre	1	2	3	4	5	6	7	8	9	10	11	12
Colour	blue	orange	green	braun	grey	white	red	black	yellow	purple	pink	turquoise

Fibre	13	14	15	16	17	18	19	20	21	22	23	24
Colour <sup>1)</sup>	blue	orange	green	braun	grey	white	red	black	yellow	purple	pink	turquoise

<sup>1)</sup> Colour with a strip

### Tubes Color Coding for MLT Cables

Tube	1	2	3	4	5	6	7	8	9	10	11	12
Colour	blue	orange	green	braun	grey	white	red	black	yellow	purple	pink	turquoise

### Tubes Color Coding for MLT Cables

Tube	1	2	3	4
Colour	red	green	natural	natural