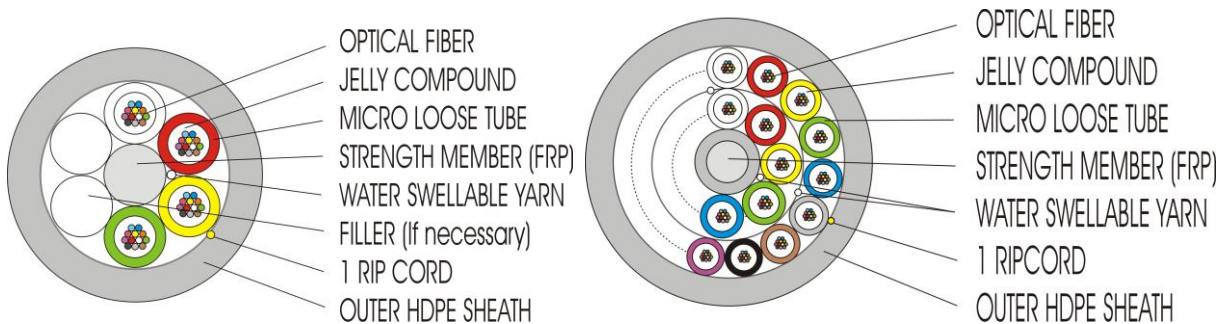


■ ULTRA MICRO LOOSE TUBE DUCT INSTALLATION CABLE (4C~432C)



[Single Layer: 4~144C]

[Multi Layer: 192~432C]

- SINGLE MODE OPTICAL FIBER (ITU-T G.652D, LWPF ; Low Water Peak Fiber)
- MICRO LOOSE TUBE (JELLY FILLED)
- CENTRAL STRENGTH MEMBER (FRP)
- DRY CORE DESIGN, SZ STRANDING (1layer: 4~144C, 2layer: 192~288C, 3layer: 432C)
- UMT-OPE* SHEATH FOR DUCT INSTALLATION

Fiber Counts		4~6C	12~72C	96C	144C	192C	288C	432C
Nom. cable diameter (mm)		5.4	5.4	6.2	8.0	8.3	9.6	11.4
Fibers per tube		4 or 6	12	12	12	12	12	12
Nom. micro tube diameter (mm)		1.45	1.45	1.45	1.45	1.45	1.45	1.45
Nom. outer sheath thickness (mm)		0.5	0.5	0.5	0.5	0.5	0.5	0.5
Min. bend radius (mm)	No load (15xD)	80	80	95	120	125	145	170
	Under load (20xD)	110	110	125	160	165	190	225
Max. pulling tension (N)	Installation	650	650	1000	1200	1000	1200	1200
	Operation	350	350	600	700	600	700	700
Cable weight (kg/km)		23	25	35	57	55	77	102
Recommended temperature range		-40 °C ~ +70 °C (Transportation & Storage) -10 °C ~ +50 °C (Installation) -30 °C ~ +70 °C (Operation)						

- Note:**
1. UMT-OPE : Ultra Micro Tube _ Outer HDPE Sheath
 2. Cable diameter may vary by -0/+0,2mm
 3. Cable weight may vary by -0/+1kg

● **Mechanical and Environmental Properties**

Item	Test Method	Test Condition	Acceptance Criteria
Tensile strength	IEC 794-1-E1	- Load: See table	Note 1), 2)
Crush	IEC 794-1-E3	- Load: 700 N/100mm	Note 1), 2)
Impact	IEC 794-1-E4	- Impact energy : 1J (1Nm) - Impact diameter: 10mm, 3impacts	Note 1), 2)
Repeated bending	IEC 794-1-E6	- Bending radius: 20×cable diameter - Bending cycles: 35	Note 1), 2)
Torsion	IEC 794-1-E7	- Test length: 2m - Twist angle: ±180 degrees - Twist cycles: 10	Note 1), 2)
Temperature cycling	IEC 794-1-F1	- Temperature change: -30℃→+70℃	Note 3)
Water penetration	IEC 794-1-F5	- Cable length: 3m, Water height: 1m - Duration time: 24 hrs	No water leak

Note 1) Attenuation : ≤ 0.1dB 2) No mechanical damage
 3) Attenuation : ≤ 0.2dB/km (each procedure), ≤ 0.1dB/km (after test)

Annex 1. Color Code of Optical Fiber and Loose Tube

No.	1	2	3	4	5	6	7	8	9	10	11	12	13~18
Color	White	Red	Yellow	Green	Blue	Grey	Brown	Black	Violet	Turquoise	Orange	Pink	Natural

Annex 2. Optical Fiber Cable Unit Composition

■ 4 ~ 144C (Single Layer)

Cable Core	Count of optical fiber per loose tube and unit composition												
	U1	U2	U3	U4	U5	U6	U7	U8	U9	U10	U11	U12	
4C	4	F	F	F	F	F							
6C	6	F	F	F	F	F							
12C	12	F	F	F	F	F							
24C	12	12	F	F	F	F							
36C	12	12	12	F	F	F							
48C	12	12	12	12	F	F							
60C	12	12	12	12	12	F							
72C	12	12	12	12	12	12							
96C	12	12	12	12	12	12	12	12					
144C	12	12	12	12	12	12	12	12	12	12	12	12	12

Note) F: Filler (Natural color)

■ 192C ~ 432C (Multi Layer)

Cable Core		Count of optical fiber per loose tube and unit composition																	
		U1	U2	U3	U4	U5	U6	U7	U8	U9	U10	U11	U12	U13	U14	U15	U16	U17	U18
192C	1 layer	12	12	12	12	12	12												
	2 layer	12	12	12	12	12	12	12	12	12	12	F	F						
288C	1 layer	12	12	12	12	12	12	12	12	12									
	2 layer	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12			
432C	1 layer	12	12	12	12	12	12												
	2 layer	12	12	12	12	12	12	12	12	12	12	12	12						
	3 layer	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12

Note) F: Filler (Natural color)

Revision Table

Rev. No	Date	Page	Description
R0	Jan.04.2019	1~3	Initial release Spec No : MC-2019-DUCATEL-UMT_OPE(4~432C)-R0 - G.652D 4, 6, 12, 24, 36, 48, 60, 72, 96, 144, 192, 288, 432C