



Single-mode optical fiber with low water peak «E3 (G657A1)» is a fiber with a reduced sensitivity to bends. The fiber is produced by vapor axial deposition method (VAD) with a quartz core alloyed with Germanium. It complies with the recommendations ITU-T G.652d and G.657A1 and is a product manufactured in the Russian Federation. Double acrylic coating provides its high strength and a long service life. The fiber

works in a full spectral range of different access networks and can be applied in long distance communications. Fiber bending resistance and improved attenuation parameters give an advantage in the application for residential networks. The quality control system of the factory confirms plug compatibility with fiber E3(G652d) manufactured by «Optic fiber Systems», JSC as well as with all available on the market SMF fibers.

Dimensional Specifications

Core-Clad Concentricity, μm	$\leq 0,5$
Cladding Diameter, μm	$125\pm 0,7$
Cladding Non-Circularity, %	$\leq 0,7$
Coating Diameter, μm	242 ± 5
Fiber Curl, m radius of curvature	≥ 4
Coating-Cladding Concentricity, μm	≤ 12
Length, km	$25,2 / 50,4$

Optical Specifications

Maximum Attenuation, dB/km at wavelengths

1310 nm	$\leq 0,32$
1383 nm	$\leq 0,32$
1550 nm	$\leq 0,18$
1625 nm	$\leq 0,2$

Attenuation vs. wavelength

1285-1330 nm at wavelength 1310 nm	$\leq 0,03$
1525-1575 nm at wavelength 1550 nm	$\leq 0,02$

Point discontinuity, dB

1310 nm	$\leq 0,05$
1550 nm	$\leq 0,05$

Mode Field Diameter, μm

1310 nm	$9,2\pm 0,4$
1550 nm	$10,4\pm 0,5$

Cable Cutoff wavelength, (λ_{CC}), nm

	≤ 1260
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Dispersion, ps/nm-km

1550 nm	≤ 18
1625 nm	≤ 22

Zero-dispersion wavelength (λ_0), nm

	$1300-1324$
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Zero dispersion slope, ps/nm²-km

	$\leq 0,092$
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Polarization Mode Dispersion (PMD), ps/ $\sqrt{\text{km}}$

Maximum Individual Fiber PMD	$\leq 0,2$
PMD Link Design Value	$\leq 0,14$

Performance Specifications

Effective Group Index of Refraction

1310 nm /1383 nm	1,466
1550 nm	1,467
1625 nm	1,470

Macrobend Loss

Winding conditions	Wavelength, nm	Induced Attenuation, dB
1 turn around a mandrel of 10mm radius	1550	0,75
	1625	1,5
10 turns around a mandrel of 15mm radius	1550	0,25
	1625	1,0

Mechanical Specifications

ProofTest, GPa (Other tension force on request)	$\geq 0,69$
Coating Strip Force, N	
Peak force	1 – 8,9
Typical average force	1 – 5
Dynamic Stress Corrosion Susceptibility Parameter (N_d)	≥ 20

Environmental Characteristics

Induced Attenuation 1310 nm, 1550 nm & 1625 nm, dB/km

-60°C ~ +85°C Temperature dependence	$\leq 0,05$
+23°C Water Immersion	$\leq 0,05$
+85°C Heat Aging	$\leq 0,05$
+85°C/85%Damp Heat	$\leq 0,05$

