

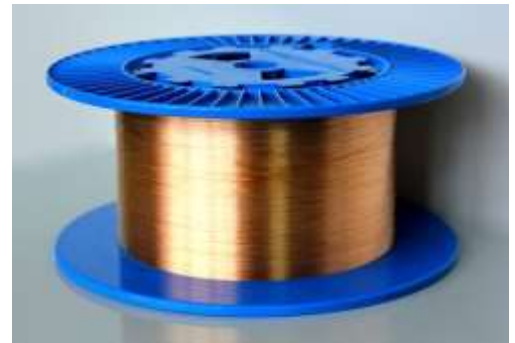
# SPECIALTY FIBER COPPER COATED FIBERS

## SINGLE MODE

Copper-coated single mode fibers are high strength optical fibers that can be used for both high-temperature and cryogenic applications. Thin additional carbon underlayer is typically added to improve hermetic property of the coating and therefore provide improved mechanical strength. This fiber type is used in sensor systems for biomedicine, oil and gas industry, aircraft applications, high vacuum devices, etc.

### FEATURES:

- ❖ Solderable coating allows feeding the fibers into high vacuum systems and provides no outgassing.
- ❖ Radiation resistant construction.



FIBER SPECIFICATIONS	OK-6/125-C/Cu	OK-9/125-C/Cu	OK-6/125F-C/Cu	OK-9/125F-C/Cu
Core diameter, $\mu\text{m}$	$6.8 \pm 0.5$	$9.1 \pm 0.5$	$6.8 \pm 0.5$	$9.1 \pm 0.5$
Mode field diameter (Gauss), $\mu\text{m}$	$7.5 \pm 0.6$	$10.0 \pm 0.6$	$7.5 \pm 0.6$	$10.0 \pm 0.6$
Clad diameter, $\mu\text{m}$	$125 \pm 1$	$125 \pm 1$	$125 \pm 1$	$125 \pm 1$
Coating diameter, $\mu\text{m}$	$160 \pm 5$	$160 \pm 5$	$160 \pm 5$	$160 \pm 5$
Fiber type	Single mode			
Coating material	Copper/ Copper alloy			
Additional inner layer	carbon	carbon	carbon	carbon
Attenuation at $1550\text{nm}^1$ , dB/km	$< 7$	$< 7$	$< 7$	$< 7$
Wavelength range, nm	$1500 \div 1600$	$1500 \div 1600$	$1500 \div 1600$	$1500 \div 1600$
Core material	Silica Ge-doped	Silica Ge-doped	Silica	Silica
Depressive clad	-	-	F-doped	F-doped
Clad material	silica	silica	silica	silica
Cutoff wavelength, nm	$< 1450$	$< 1450$	$< 1450$	$< 1450$
Numerical Aperture (NA)	$0.16 \pm 0.02$	$0.13 \pm 0.02$	$0.16 \pm 0.02$	$0.13 \pm 0.02$
$\Delta n$	$0.009 \pm 0.001$	$0.005 \pm 0.001$	$0.009 \pm 0.001$	$0.005 \pm 0.001$
Short-term bending radius, mm	$\geq 10$	$\geq 10$	$\geq 10$	$\geq 10$
Long-term bending radius, mm	$\geq 25$	$\geq 25$	$\geq 25$	$\geq 25$
Proof test, kpsi	$> 100$	$> 100$	$> 100$	$> 100$
Min operating temperature <sup>2</sup> , $^{\circ}\text{C}$	- 196	- 196	- 196	- 196
Max operating temperature (short time $< 60\text{s}$ ) <sup>2</sup> , $^{\circ}\text{C}$	600	600	600	600
Max operating temperature (long time $> 60\text{s}$ ) <sup>2</sup> , $^{\circ}\text{C}$	$< 400$	$< 400$	$< 400$	$< 400$
Permissible rate of temperature change in the temperature range, $^{\circ}\text{C}/\text{min}$	5	5	5	5

1- under normal climatic conditions

2- in inert environment