FEDERAL SUPPLY CLASS
6010

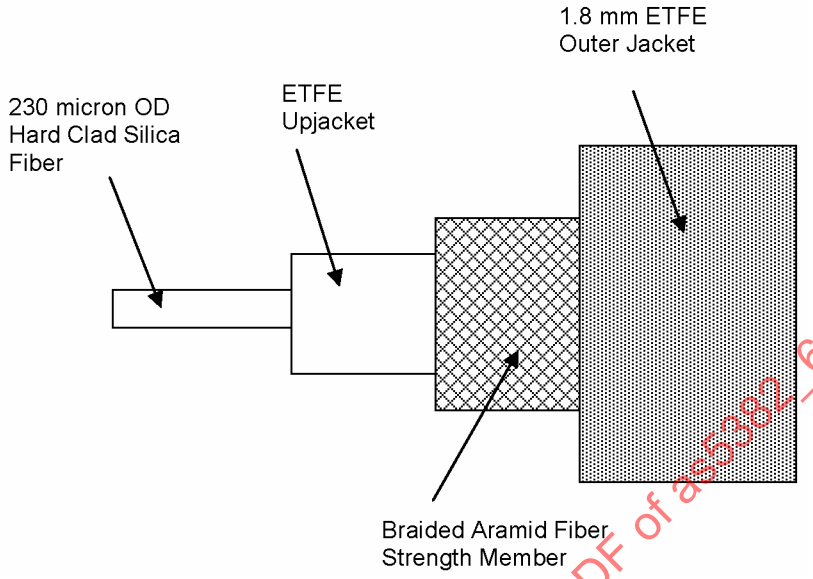


FIGURE 1 - CABLE CONFIGURATION

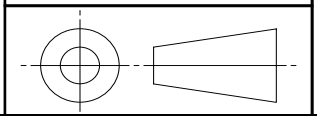
1. Construction Description

1.1 Optical Fiber Dimensions and Materials

Core Diameter:	200 µm ± 4.0 µm (0.0078 in ± 0.00016 in)
Core Material:	Step Index Silica Glass
Cladding Diameter:	230 +0, -10 µm (0.0091 +0, -0.0004 in)
Cladding Material:	Hard Polymer (HCS)
Core to Cladding Ellipticity:	3% maximum
Core to Cladding Offset:	5 µm maximum
Hermetic Coated:	No
Primary Coating::	No

ISSUED 2004-04

THIRD ANGLE PROJECTION



CUSTODIAN: SAE AE-8/AE-8D

SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

CABLE, FIBER OPTIC, MULTI-MODE,
200/230/500 µm,
STEP INDEX, TIGHT BUFFER

AS5382/6
SHEET 1 OF 4

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)** **Tel: 724-776-4970 (outside USA)**
Fax: 724-776-0790 **Email: custsvc@sae.org** **SAE WEB ADDRESS: http://www.sae.org**

1.2 Cable Dimensions and Materials

Upjacket Diameter:	500 µm ± 30 µm (0.0195 in ± 0.00117 in)
Upjacket Material:	Ethylene-Tetrafluoroethylene Copolymer (ETFE)
Strength Member:	Braided Aramid Fiber
Yarn Size:	380 Denier
Number of Ends:	16
Braid Picks/Inch:	9
Outer Jacket Diameter:	1800 µm ± 100 µm (0.0709 in max ± 0.039 in max)
Outer Jacket Material:	Ethylene-Tetrafluoroethylene Copolymer (ETFE)
Outer Jacket Concentricity:	6% of Jacket Outer Diameter

1.3 Cable Performance

Operational Mode:	Multi-mode
Temperature Rating:	-55 to +125 °C
Storage Temperature:	-55 to +85 °C
Outer Jacket Color:	Purple
Finished Cable Weight:	4.0 kg/km maximum

2. Optical Fiber Requirements

Maximum Attenuation:	≤8 dB/km @ 850 nm
Numerical Aperture:	0.37 ± 0.02
Fiber Tensile Proof Test:	150,000 psi minimum
Bandwidth	≥20 MHz-km @ 850 nm

3. Environmental

Fluid Immersion:	See Table 1 for test fluid listing.
Freezing Water Immersion:	≤0.5 dB change in optical transmittance during the test with ≤0.5 dB permanent change after test
Humidity Resistance:	≤0.5 dB change in optical transmittance during the test with ≤0.5 dB permanent change after test
Wicking:	Water Penetration of 88.5 mm maximum
Fungus Resistance:	Fungus inert per MIL-HDBK-454 Guideline 4
Blocking:	No areas of localized adhesion

4. Mechanical

Cold Bend:	≤0.5 dB change in optical transmittance after test
Cyclic Flex:	≤0.5 dB change in optical transmittance during the test with ≤0.5 dB permanent change after test Test temps: -55 °C, +25 °C, +125 °C
Impact Resistance:	≤0.5 dB change in optical transmittance during the test with ≤0.5 dB permanent change after test
Crush Resistance:	≤0.5 dB change in optical transmittance during the test with ≤0.5 dB permanent change after test

Corner Bend:	≤0.5 dB change in optical transmittance during the test with ≤0.5 dB permanent change after test
Cable Tensile Load and Bending:	≤0.5 dB change in optical transmittance during the test with ≤0.5 dB permanent change after test Maximum tensile load 132 N
Jacket Material Tensile and Elongation:	Tensile Strength: 900 N/cm^2 minimum Elongation: 125% minimum
Durability of Manufacturer's Identification:	Required unless identification marking is under a clear jacket
Jacket Strippability:	Easily Removed, No damage to Fiber at 10X

5. Thermal

Flammability:	After Flame: 30 seconds maximum Flame Travel: 3 inches maximum Tissue Flaming: None
Thermal Shock:	Temperature Range: -55 to +125 °C Maximum Cable Diameter Change of ±10% ≤0.5 dB change in optical transmittance after test
Property Retention After Thermal Aging:	750 h at 125 °C 300 h at 130 °C 100 h at 150 °C Maximum Cable Diameter Change of ±10% ≤0.5 dB change in optical transmittance after test Jacket tensile and elongation: 75% of initial value
Storage Life:	Temperature Range: -55 to +85 °C No Visual Damage at 10X Magnification ≤0.5 dB change in optical transmittance after test
Temperature Cycling:	5 cycles, temperature range: -55 to +125 °C Maximum Cable Diameter Change of ±10% ≤0.5 dB change in optical transmittance during the test with ≤0.5 dB permanent change after test
Temperature Cycling With Mandrel:	5 cycles, temperature range: -55 to +125 °C Wrapped 5 times around a 0.75 inch mandrel Maximum Cable Diameter Change of ±10% ≤0.5 dB change in optical transmittance during the test with ≤0.5 dB permanent change after test
Jacket Shrinkage:	2.3 mm maximum in a 360 mm sample