

Optical fiber with integrated fiber Bragg grating sensors will be used at NASA for strain and/or temperature measurement during experiments. The sensors will be interrogated by an Optical Frequency Domain Multiplex (OFDR) system. The sensors will be in a continuous piece of optical fiber manufactured without fusion or other splices and bonded or otherwise attached to structures or test articles for distributed measurements.

Specifications for Optical Fiber with fiber Bragg grating sensors shall meet the following specifications:

Fiber Length: 300m
Grating Length: 5mm
Grating center to center spacing: 10mm
Number of fiber Bragg grating sensors: 30000
Reflectivity: 0.05-0.1%
NA: 0.24-0.28
MFD: 6+-0.2 micron
Center wavelength: 1550 nm nominal
Coating: ORMOCER
Cladding diameter: 125+-1 micron
Coated fiber diameter: 195 micron typical