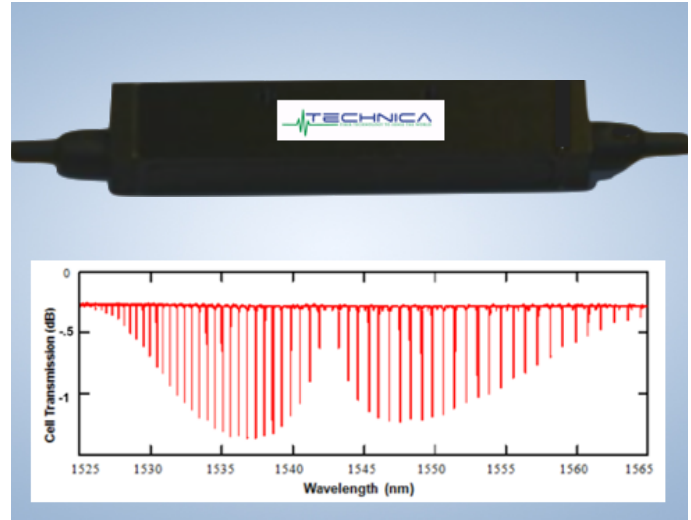


Description

The TWR10 is a Single-Mode Fiber (SM) based Packaged Hydrogen Cyanide Gas Cell (H13C14N) for use as NIST traceable absolute wavelength reference in the calibration of Optical Spectrum Analyzers, Tunable Lasers, Tunable Filters, Chemical Analysis Systems, and Optical Sensing Systems.

Hermetically sealed for long operation life and coated lenses and wedged windows to virtually eliminate influences from the ambient environment. Ready for direct connection via standard optical connectors or by splicing. The TWR10 Gas Cell is easy to handle and installation is fast and intuitive. Immune to lightning and electromagnetic interference (EMI).

Widely used in optical test and monitoring instruments, the TWR10 is well fit for telecom systems, for medical and pharmaceutical applications, and for optical sensing applications in security, robotics, civil & geotechnical engineering, oil & gas, aerospace, railways, roadways, performance gear, marine vessels & racing yachts, wind turbines and structures, pipelines, nuclear facilities, industrial processes, and for research laboratories worldwide.



Key Features

NIST traceability. The TWR10 Gas Cell absorption spectrum is determined by fundamental molecular energy level transitions that have been well characterized by standards bodies such as NIST. The presence of H13C14N at the specified pressure of 25 Torr guarantees repeat absorption spectra characteristics. The TWR10 pressure uncertainty of +/-10% is well within the NIST's stated uncertainty requirement of +/-20% and therefore the TWR10 Gas Cell is assured to be NIST traceable.

Safety. The TWR10 contains <40µg of H13C14N, which is a quantity far below any quantity deemed hazardous by the Occupational Safety and Health Administration (OSHA), which lists a Permissible Exposure Limit (PEL) for H13C14N of 11mg/m³ over an eight hour period. No special measures are necessary for the handling and use of the TWR10 Gas Cells and they may be carried or shipped when and as needed.

Optical connectorization available. With FC/APC, FC/UPC, LC/APC, LC/UPC, SC/APC, SC/UPC, LSA-DIN/APC, E2000, and other optical interfaces, or unconnectorized with standard one meter single mode fiber pigtails.

Low cost and field proven. For demanding projects that require both low cost and stable operation for the long-term. Extensively used in the field as absolute wavelength calibration artifacts within instruments and as stand-alone absolute wavelength references.

TWR90 Calibration Box Available: Sensibly priced and consists of one TWR10 HCN Gas Cell, one TWR30 25GHz Athermal Fabry-Perot Etalon, and one TWR60 1550nm CW Athermal Fiber Bragg Grating (FBG). The TWR90 is designed to internally accommodate additional optical components of interest if needed. Ideal for quality control, calibration labs, metrology, and education.

Parameter	Specifications
Wavelength Range	1525nm to 1565nm
Wavelength Accuracy	< +/- 0.2pm
Absorption Line Depth (R8)	1.1dB
Linewidth (FWHM, Log, R8)	16pm
Temperature Dependence	<0.01pm/°C
Gas Pressure	25Torr
Transmission (Fiber-to-Fiber)	>50%
Spectral Ripple (P-P)	<0.1dB
Operating Temperature	+5°C to +70°C
Storage Temperature	-40°C to +80°C
Shock Resistance (all axes)	>100g
Pigtail Bend Radius	>17mm
Optical Connector	FC/APC, LC/APC, SC/APC, or custom, or none
Dimensions	55mm cell path length, 72mm total device length no booths, 110mm w strain relief booths
Lifetime	>10Years

Applications include Commercial Test and Monitoring Instruments and Metrology

Technica undertakes a rigorous development process before products release. The company is also firmly committed to continuous improvements after release to insure performance to the highest standards, hence, specifications are subject to update without notice.

Technica Optical Components / 3657 Peachtree Rd, Suite 10A, Atlanta, 30319, USA, info@technicasa.com, www.technicasa.com

R Branch	Wavelength (nm)	P Branch	Wavelength (nm)
26	1527.63342(12)	1	1543.11423(5)
25	1528.05474(15)	2	1543.80967(18)
24	1528.48574(9)	3	1544.51503(8)
23	1528.92643(6)	4	1545.23033(7)
22	1529.37681(7)	5	1545.95549(7)
21	1529.83688(6)	6	1546.69055(8)
20	1530.30666(8)	7	1547.43558(24)
19	1530.78615(8)	8	1548.19057(7)
18	1531.27537(7)	9	1548.95555(4)
17	1531.77430(8)	10	1549.73051(4)
16	1532.28298(8)	11	1550.51546(5)
15	1532.80139(7)	12	1551.31045(9)
14	1533.32954(8)	13	1552.11546(10)
13	1533.86745(7)	14	1552.93051(9)
12	1534.41514(6)	15	1553.75562(12)
11	1534.97258(6)	16	1554.59079(10)
10	1535.53981(5)	17	1555.43605(11)
9	1536.11683(4)	18	1556.29141(15)
8	1536.70364(5)	19	1557.15686(15)
7	1537.30029(6)	20	1558.03240(15)
6	1537.90675(13)	21	1558.91808(14)
5	1538.52305(7)	22	1559.81389(14)
4	1539.14921(12)	23	1560.71983(10)
3	1539.78523(9)	24	1561.63593(9)
2	1540.43120(10)	25	1562.56218(13)
1	1541.08703(10)	26	1563.49859(16)
0	1541.75280(6)	27	1564.44519(21)

25 Torr H¹³C¹⁴N Center Wavelengths

Values as stated by NIST. Expanded (2 sigma) uncertainties are stated in parenthesis and apply to least significant digits.