# Multi-configurable optical probe for measurement and characterization of photonic devices

The LWP Series Lightwave Probe enables optical measurements for on-wafer and hybrid photonic devices. It features user replaceable fiber pigtails allowing the probe to be optimized for a variety of light delivery and light collection applications including the characterization of topside illuminated photodiodes, Vertical Cavity Surface Emitting Lasers (VCSELs), hybrid transmitters and receivers and LEDs.

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## Description

The LWP Series Lightwave probe can illuminate and collect optical signals used in the characterization of a variety of photonic devices. The probe is optimized for use with Cascade Microtech probe stations and when combined with Cascade's RF and DC probes, can provide modulation, spectral, time domain and low-level DC/CV measurements.

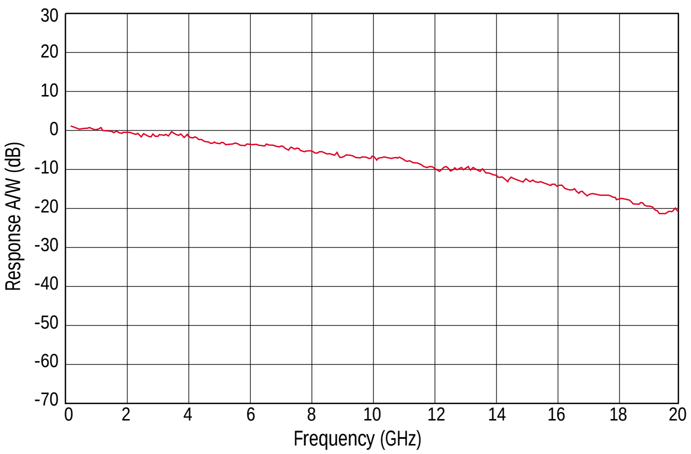
The choice of field-replaceable fiber pigtail depends on the required illumination pattern or collection efficiency. The fiber pigtails are available as singlemode or multimode with either a lensed or cleaved end face. The lensed fiber pigtails provide high numerical aperture (NA) illumination and collect light with extremely low back-reflection. The lensed singlemode fiber can provide an illumination area as small as 5-microns. The multimode pigtails are well suited for high-efficiency collection of light.

## Features

- Field interchangeable fiber-type
- Optimized for Cascade Microtech probe stations
- Patented contact protection design
- Fiber-types optimized for a variety of applications
- Standard FC type fiber-optic connector

## Benefits

- Brings test equipment capability to the wafer and substrate level
- Enables fast, accurate, and repeatable measurements
- On-wafer capability eliminates need to dice wafer before test and eliminates electrical parasitics for at-speed testing
- Makes wafer mapping and visual display of key parameters possible



**Responsivity measurement of an 80 micron photodiode using the LWP-series Lightwave probe and the Agilent Technologies 83420A Lightwave Test Set**

## Specifications

| Fiber Type | Useable Illumination Diameter Range (µm) | Wavelength (nm) | Numeric Aperture | Insertion loss (dB) |
|---|---|---|---|---|
| Cleaved-Singlemode (CLV-SM) | 25 or larger | 400 - 1750* | 0.13 | 0.5 |
| Cleaved-Multimode (CLV-MM) | 75 or larger | 400 - 1750 | 0.28 | 0.5 |
| Lensed-Singlemode (LEN-SM) | 5 - 25 | 400 - 1750* | | 0.5 |
| Lensed-Multimode (LEN-MM) | 15-75 | 400 - 1750 | | 0.5 |

* Fiber operates as multimode from 400 to 800 nm.

## Ordering Information

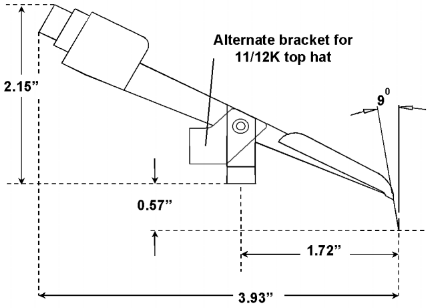
Use the following chart to choose Lightwave probes and replacement fibers.

| | Probe with Fiber | | Replacement Fibers | |
|---|---|---|---|---|
| | **Cleaved Fiber** | **Lensed Fiber** | **Cleaved Fiber** | **Lensed Fiber** |
| **Singlemode** | LWP-CLV-SM | LWP-LEN-SM | FT-CLV-SM | FT-LEN-SM |
| **Multimode** | LWP-CLV-MM | LWP-LEN-MM | FT-CLV-MM | FT-LEN-MM |

## Standard Accessories

Probe orders include:

- 2 eyepiece filters for safe viewing of CDRH Class 1 laser sources for wavelengths of 800 to 1550 nm
- Alternate mounting bracket for use in a Summit MicroChamber® equipped probe station



**Side view of LWP-series Lightwave Probe**

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Innovating Test Technologies for better measurements faster

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