

### Overviews

HD4102F series Optical Time Domain Reflectometer (OTDR) is an intelligent meter of a new generation for the detection of fiber communications systems. With the popularization of optical network construction in cities and countrysides, the measurement of optical network becomes short and disperse; HD4102F is specially designed for that kind of application. It's economic, having outstanding performance.

HD4102F is manufactured with patience and carefulness, following the national standards to combine the rich experience and modern technology, subject to stringent mechanical, electronic and optical testing and quality assurance; in the other way, the new design makes HD4102F more smart and compact and multi-purpose.

Whether you want to detect link layer in the construction and installation of optical network or proceed efficient maintenance and trouble shooting, OTDR4102F can be your best assistant.

### Feature

- Integrated design, smart and rugged
- IP65 protection level, outdoor enhanced
- 7-inch anti-reflection LCD screen
- PON online test module (1625nm) is optional
- Support multi-language display and input

### Application

- FTTX test with PON networks
- CATV network testing
- Access network testing
- LAN network testing
- Metro network testing



### Specification

Item	Parameter
Dimension	253×168×73.6mm , 1.5kg (battery included)
Display	7 inch TFT-LCD with LED backlight (touch screen function is optional)
Interface	1×RJ45 port, 3×USB port (USB 2.0, Type A USB×2, Type B USB×1)
Power Supply	10V(dc), 100V(ac) to 240V(ac), 50~60Hz
Battery	7.4V(dc)/4.4Ah lithium battery (with air traffic certification) Operating time: 12 hours①, Telcordia GR-196-CORE Charging time: <4 hours (power off)
Power Saving	Backlight off: Disable/1 to 99 minutes Auto shutdown: Disable/1 to 99 minutes

# HD4102F Series

## Optical Time Domain Reflectometer



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Test Equipment

Data Storage	Internal memory: 4GB (about 40,000 groups of curves)
Language	User selectable (English, Simplified Chinese, traditional Chinese, French, Korean, Russian, Spanish and Portuguese-contact us for availability of others)
Environmental Conditions	Operating temperature and humidity: -10°C~+50°C, ≤95% (non-condensation) Storage temperature and humidity: -20°C~+75°C, ≤95% (non-condensation) Proof: IP65 (IEC60529)
Accessories	Standard: Main unit, power adapter, Lithium battery, FC adapter, USB cord, User guide, CD disk, carrying case Optional: SC/ST/LC adapter, Bare fiber adapter

### Technical parameter

Type	Testing Wavelength (MM: ±20nm, SM: ±10nm)	Dynamic Range (dB)	Event Dead-zone (m)	Attenuation Dead-zone (m)
HD4102F-A1	1310/1550	32/30	1	8/8
HD4102F-A2	1310/1550	37/35	1	8/8
HD4102F-A3	1310/1550	42/40	0.8	8/8
HD4102F-A4	1310/1550	45/42	0.8	8/8
HD4102F-F1	1310/1490/1550	30/28/28	1.5	8/8/8
HD4102F-F2	1310/1550/1625	30/28/28	1.5	8/8/8
HD4102F-F3	1310/1490/1550	37/36/36	0.8	8/8/8
HD4102F-F4	1310/1550/1625	37/36/36	0.8	8/8/8

### Test parameter

Item	Parameter
Pulse Width	Single mode: 5ns, 10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1 μs, 2 μs, 5 μs, 10 μs, 20 μs
Testing Distance	Single mode: 100m, 500m, 2km, 5km, 10km, 20km, 40km, 80km, 120km, 160km, 240km
Sampling Resolution	Minimum 5cm
Sampling Point	Maximum 128,000 points
Linearity	≤0.05dB/dB
scale Indication	X axis: 4m~70m/div, Y axis: Minimum 0.09dB/div
Distance Resolution	0.01m
Distance Accuracy	±(1m+measuring distance×3×10 <sup>-5</sup> +sampling resolution) (excluding IOR uncertainty)
Reflectance Accuracy	Single mode: ±2dB, multi-mode: ±4dB
IOR Setting	1.4000~1.7000, 0.0001 step
Units	Km, miles, feet
OTDR Trace Format	Telcordia universal, SOR, issue 2 (SR-4731) OTDR: User selectable automatic or manual set-up

Testing Modes	Visual fault locator: Visible red light for fiber identification and troubleshooting Light source: Stabilized Light Source (CW, 270Hz, 1kHz, 2kHz output) Field microscope probe
Fiber Event Analysis	-Reflective and non-reflective events: 0.01 to 1.99dB (0.01dB steps) -Reflective: 0.01 to 32dB (0.01dB steps) -Fiber end/break: 3 to 20dB (1dB steps)
Other Functions	Real time sweep: 1Hz Averaging modes: Timed (1 to 3600 sec.) Live Fiber detect: Verifies presence communication light in optical fiber Trace overlay and comparison

### VFL Module (Visual Fault Locator , as standard funtion )

Item	Parameter
Wavelength ( $\pm 20\text{nm}$ )	650nm
Power	10mw,CLASSIII B
Range	12km
Connector	FC/UPC
Launching Mode	CW/2Hz

### PM Module (Power Meter, as optional function):

Item	Parameter
Wavelength Range ( $\pm 20\text{nm}$ )	800~1700nm
Calibrated Wavelength	850/1300/1310/1490/1550/1625/1650nm
Test Range	Type A: -65~+5dBm (standard); Type B: -40~+23dBm (optional)
Resolution	0.01dB
Accuracy	$\pm 0.35\text{dB} \pm 1\text{nW}$
Modulation Identification	270/1k/2kHz, Pinput $\geq -40\text{dBm}$
Connector	FC/UPC

### LS Module (Laser Source, as optional function):

Item	Parameter
Working Wavelength ( $\pm 20\text{nm}$ )	1310/1550/1625nm
Output Power	Adjustable -25~0dBm
Accuracy	$\pm 0.5\text{dB}$
Connector	FC/UPC

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### FM Module (Fiber Microscope, as optional function):

Item	Parameter
Magnification	400X
Resolution	1.0 $\mu$ m
View of Field	0.40 $\times$ 0.31mm
Storage/working Condition	-18 $^{\circ}$ C~35 $^{\circ}$ C
Dimension	235 $\times$ 95 $\times$ 30mm
Sensor	1/3 inch 2 million of pixel
Weight	150g
USB	1.1/2.0
Adapter	SC-PC-F (For SC/PC adapter) FC-PC-F (For FC/PC adapter) LC-PC-F (For LC/PC adapter) 2.5PC-M (For 2.5mm connector, SC/PC, FC/PC, ST/PC)

### Order Information

Product	Item	Description
OTDR	HD4102F Series	Chinese handheld OTDR for access/FTTx networking testing, 1310/1550nm ,1310/1490/1550nm,1310/1550/1625nm, dynamic range is optional, with VFL,



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