

# Specifications

## Common Specifications

### Horizontal Axis Parameters

Sampling resolution	5 cm, 10 cm, 20 cm, 50 cm, 1 m, 2 m, 4 m, 8 m, 16 m, 32 m
Readout resolution	1 cm (Min.)
Number of sampled data	Up to 50,000 points
Group refractive index	1.30000 to 1.79999 (in 0.00001 steps)
Unit of distance	km, kf, or miles
Distance measurement accuracy	Offset error: $\pm 1$ m Scale error: Measured distance $\times 2 \times 10^{-5}$ Sampling error: $\pm 1$ sampling resolution

### Vertical Axis Parameters

Vertical axis scale	0.2 dB/div, 0.5 dB/div, 1 dB/div, 2 dB/div, 5 dB/div, 7.5 dB/div
Readout resolution	0.001 dB (Min.)
Loss measurement accuracy*	$\pm 0.05$ dB/dB

\* When the measuring loss is 1dB or less, the accuracy is within  $\pm 0.05$ dB

### OTDR Measurement Function

Distance measurement	Displays up to eight digits of the relative one-way distance between two arbitrary points on the trace.
Loss measurement	Displays one-way loss in steps of 0.001 dB to a maximum of 5 digits. Displays the one-way loss, loss per unit length, and splice loss between any two given points on the waveform.
Return loss measurement	Measures return loss and total return loss of a fiber cable or between two arbitrary points on the trace.

### OTDR Analysis Functions

Analysis functions	Multi trace analysis, 2 way trace analysis, differential trace analysis, section analysis
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### Internal Memory

Memory capacity	1000 waveforms or more Can store measured waveforms, and measurement conditions
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### Display

Display	8.4-inch color TFT LCD
Total number of pixels*	640 (horizontal) $\times$ 480 (vertical)

\* The LCD may contain some pixels that are always ON or always OFF (0.002% or fewer of all displayed pixels including RGB), and is not indicative of a general malfunction.

### External Interface

USB	USB1.1 Type A and Type B, one each Type A: For external memory or external printer Type B: For connecting to an external PC for remote control or access to the OTDR's internal memory.
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### Optical I/O port

Connector type	SC (fixed), FC (fixed), SC universal adapter, FC universal adapter, No universal adapter (base)
Number of port	1 or 2*

\* Port 2 is only for model 735027 (1650nm), and Model 735030 (850nm/1300nm).

### File Formats

File formats	Read: SOR, TRD, TRB, SET Write: SOR (Telcordia), SET, CSV, BMP, JPG, PNG
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### General Specifications

Laser safety standards	class 1 M (IEC60825-1:2001)
Safety standard	EN61010-1
Emission	EN61326 Class A
Immunity	EN61326 Annex A
Operating environment	0 to 45°C
Temperature	(0 to 35°C when charging the battery)
Humidity	85% RH or less (no condensation)
Storage temperature	-20 to 60°C
Battery	Operation time 6 hours <sup>1</sup> Recharge time 5 hours <sup>2</sup>
AC adapter	
Rated supply voltage	100 to 240 VAC
Rated supply frequency	50 to 60 Hz
Power consumption	Max 70 W (when battery charging, and optional printer printing)
Dimensions	(W) 287 $\times$ (H) 197 $\times$ (D) 85 mm (not including projections or options)
Weight	Approx. 2.8 kg (not including options)

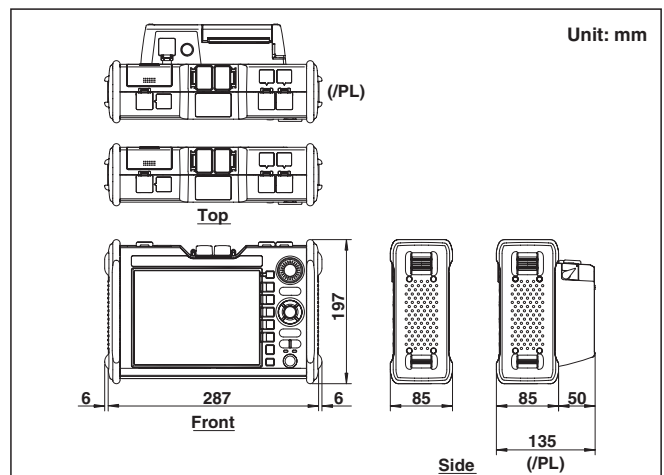
\*1 Measurement for 30 seconds in every 10 minutes, without any options, in power save mode (Full Auto 1minute).

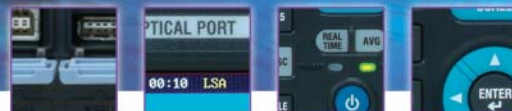
\*2 Ambient temperature of 23°C, power OFF

Laser Safety Label



### External Dimensions





▶▶▶ Specifications by Model

Single-mode Fiber 1 Wavelength Type

Model	735020	735021
Wavelength	1550±25nm	1650 ± 5nm <sup>11</sup> ±10nm <sup>12</sup>
Applicable fiber	SM (ITU-T G.652)	
Distance range	500m, 1km, 2km, 5km, 10km, 20km, 50km, 100km, 200km, 300km, 400km	
Pulse width <sup>13</sup>	3ns, 10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1us, 2us, 5us, 10us, 20us	
Dynamic range <sup>14</sup>	32dB	30dB
Event dead zone <sup>15, 11</sup>	0.8m	0.8m
Attenuation dead zone <sup>16, 11</sup>	8m (typ)	12m (typ)

Single-mode Fiber 2 Wavelength Type

Model	735022	735023	735024
Wavelength	1310/1550±25nm	1310/1550±25nm	1550/1625±25nm
Applicable fiber	SM (ITU-T G.652)		
Distance range	500m, 1km, 2km, 5km, 10km, 20km, 50km, 100km, 200km, 300km, 400km		
Pulse width <sup>13</sup>	3ns, 10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1us, 2us, 5us, 10us, 20us		
Dynamic range <sup>14</sup>	34/32dB	40/38dB	38/35dB
Event dead zone <sup>15, 11</sup>	0.8m	0.8m	0.8m
Attenuation dead zone <sup>16, 11</sup>	7/8m (typ)	7/8m (typ)	8/12m (typ)

Single-mode Fiber 3 Wavelength Type

Model	735025	735026	735027	735028
Wavelength	1310/1490/1550±25nm	1310/1550/1625±25nm	1310/1550±25nm 1650±5nm <sup>11</sup> , ±10nm <sup>12</sup>	1310/1550/1625±25nm
Applicable fiber	SM (ITU-T G.652)			
Distance range	500m, 1km, 2km, 5km, 10km, 20km, 50km, 100km, 200km, 300km, 400km			
Pulse width <sup>13</sup>	3ns, 10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1us, 2us, 5us, 10us, 20us			
Dynamic range <sup>14</sup>	34/30/32dB	34/32/28dB	34/32/30dB	40/38/35dB
Event dead zone <sup>15, 11</sup>	0.8m	0.8m	0.8m	0.8m
Attenuation dead zone <sup>16, 11</sup>	7/8/8m (typ)	7/8/12m (typ)	7/8/12m (typ)	7/8/12m (typ)

Multimode Fiber 2 Wavelength Type

Model	735029
Wavelength	850/1300±30nm
Applicable fiber	GI (50/125, 62.5/125μm)
Distance range	500m, 1km, 2km, 5km, 10km, 20km, 50km, 100km
Pulse width <sup>13, 7</sup>	10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1us, 2us, 5us
Dynamic range <sup>18, 10</sup>	22.5/24dB
Event dead zone <sup>19, 10, 11</sup>	2m (typ)
Attenuation dead zone <sup>16, 10, 11</sup>	7/10m (typ)

Multimode/Single-mode Fiber 4 Wavelength Type

Model	735030	
Wavelength	1310/1550±25nm	850/1300nm±30nm
Applicable fiber	SM (ITU-T G.652)	GI (50/125, 62.5/125μm)
Distance range	500m, 1km, 2km, 5km, 10km, 20km, 50km, 100km, 200km, 300km, 400km	500m, 1km, 2km, 5km, 10km, 20km, 50km, 100km
Pulse width <sup>13</sup>	3ns, 10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1us, 2us, 5us, 10us, 20us	10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1us, 2us, 5us <sup>7</sup>
Dynamic range	34/32dB <sup>14</sup>	22.5/24dB <sup>18, 10</sup>
Event dead zone	0.8m <sup>15, 11</sup>	2m (typ) <sup>19, 10, 11</sup>
Attenuation dead zone	7/8m (typ) <sup>11</sup>	7/10m (typ) <sup>16, 10, 11</sup>

<sup>\*1</sup> At a point -20 dB from the pulse light output peak value (measured 30 min. or more after power ON, ambient temperature of 23°C)  
<sup>\*2</sup> At a point -60 dB from the pulse light output peak value (measured 30 min. or more after power ON, ambient temperature of 23°C)  
<sup>\*3</sup> Pulse width setting range depends on the distance range.  
<sup>\*4</sup> SNR=1, at pulse width 20 μs, distance range 200 km, sampling resolution 32 m, measurement time 3 minutes.  
<sup>\*5</sup> Pulse width 3 ns, return loss 45 dB or more, at a point 1.5 dB below the peak value (not saturated).

<sup>\*6</sup> Pulse width 10 ns, return loss 45 dB or more, at a point where the backscatter level is within ±0.5 dB of the normal value.  
<sup>\*7</sup> Pulse width of 2 or 5 μs when measured wavelength is 1300 nm  
<sup>\*8</sup> SNR=1, at pulse width 200 ns(850nm), 1 μs(1300nm), measurement time 3 minutes.  
<sup>\*9</sup> Pulse width 10 ns, return loss 45 dB or more, at a point 1.5 dB below the peak value (not saturated).  
<sup>\*10</sup> GI (62.5/125 μm) is measured.  
<sup>\*11</sup> At group refractive index 1.5  
 Note: Specifications without any special remarks, assured at 23±2°C

▶▶▶ Factory Installed Option Specifications

Built-in Printer/LAN Functions (/PL option)

Printing method	Thermal line-dot
Dot density	576 dots/line
Paper width	80 mm
Operating environment	Temperature 5 to 35°C Humidity 10 to 80% RH (no condensation)
Storage temperature	-20 to 60°C
LAN function	10BASE-T/100BASE-TX (RJ-45) x1

Power Monitoring Function (/PM Option)

Optical port	OTDR optical I/O port
Measuring range <sup>11</sup>	-50 to -5 dBm
Measurement accuracy <sup>12</sup>	≤±0.5 dB

<sup>\*1</sup> CW light, wavelength 1310 nm, absolute max input level = 0 dBm (1 mW)  
<sup>\*2</sup> When inputting CW light, wavelength 1310 nm, -10 dBm

Light Source Function (Option /LS)

Optical port	OTDR optical I/O port
Center wavelength	OTDR's center wavelengths
Output power	-5 dBm or more
Modulation frequency	CW, 270 Hz

Dummy Fiber (/DM Option)\*

Optical fiber	Single-mode fiber (ITU-T G.652)
Length	100 m

\* Dummy fiber option may cause the reduction of dynamic range (0.5dB or less).