OV350-MPOPM and OV350-MPOLS
Hand Held MPO Power Meter and Light Source

Users Guide

Fiber Instrument Sales

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Section 1 Safety

Prior to using the quick start guide or operating the equipment in any way, it is highly suggested the user reads all safety information.

This product has been designed and tested in accordance with the Manufacturer's safety standards, and has been supplied in a safe condition.

Personal Safety

Personnel should always be aware when working with fiber optic test equipment that active fibers may be present and therefore infrared optical energy may be present.

Never look directly into the end of a connected fiber optic cable or fiber optic adapter of test equipment, to do so could expose the user to laser radiation and could result in sever personal injury.

To Prevent Fire or Shock Hazard

- Batteries are not field replaceable, equipment must be returned to the factory for battery replacement
- Do not use the charger without the batteries installed
- Do not expose the battery charger to rain or excessive moisture
- Do not use the AC adapter when there are signs of damage to the enclosure or cord
- Ensure that you are using the correct charger for the local line voltage

To Prevent Connector Damage

Fiber-optic connectors are easily contaminated or damaged. The connections to the OV350-MPO Lost Test Set is a physical contact type of connection and dirty or damaged connectors may impair the instruments capabilities at minimum and at worst result in the need to return this equipment to the factory for expensive repairs. Prior to making any connection to the unit, ensure that all proper cleaning procedures have been followed.

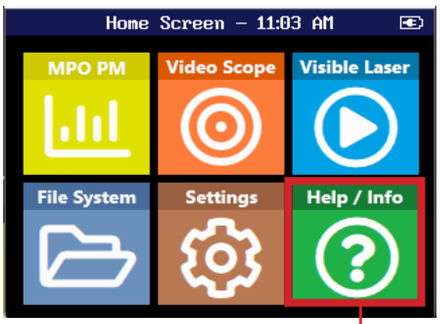
The OV350-MPO Lost Test Set is shipped with flat polished connectors for MM and angle polished connectors for SM applications, as appropriate per industry standards. Ensure the proper connector is used to interface with the unit. It is suggested a reference patch cord be used to minimize multiple connections and disconnections and to ensure proper testing practices while using the OV350 Loss Test Set

Section 2 Quick Start Guide

Power Up

Press the button to power on the both PM and LS, the home screen will be displayed.

The home screen offers direct access to the Power Meter or Light Source, whichever is applicable and video scope modules. The visible laser is operated directly from the home screen, simply touch the Visible Laser icon and toggle through CW, modulated and off. File management icon opens file management screen to manipulate and transfer files saved in the power meter, ORL and video scope modules. The settings icon opens the settings page to set date and time and pass/fail ranges for MPO on the PM and ORL on the LS. The Help icon offers the user a link to Fiber Instrument Sales manuals, upgrades and training online.



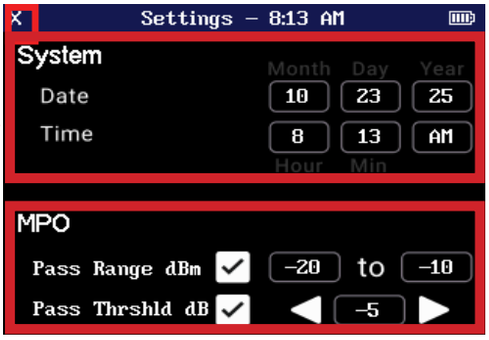
Link to FIS manuals, upgrades and training online.

Setting Screen

Select the Settings icon to open the settings screen.

Date and Time Settings

Pass Range Settings



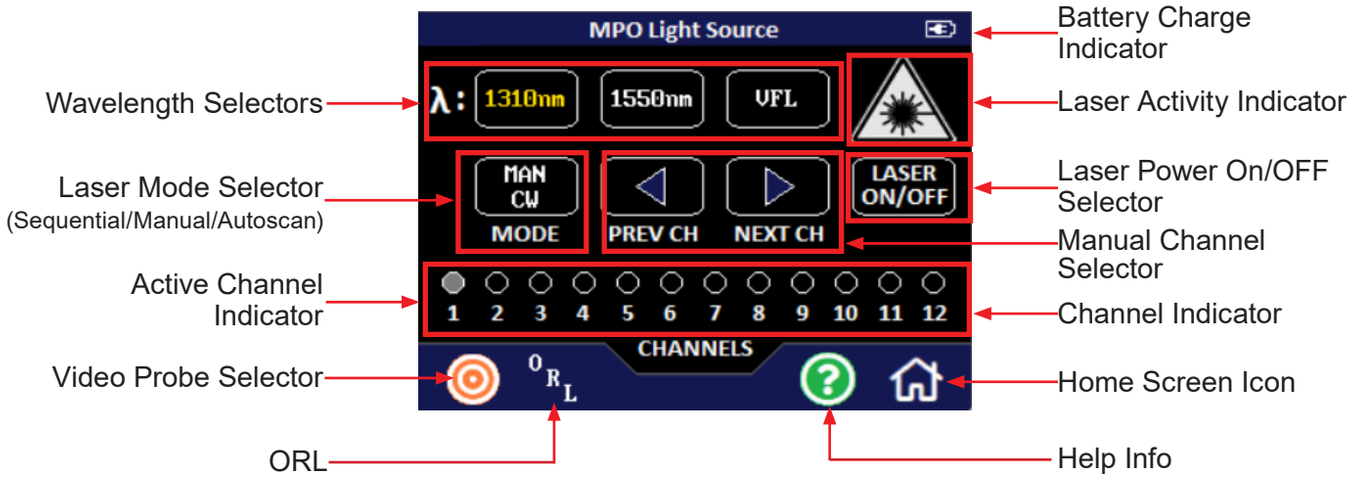
Setup

Follow the steps below for initial setup and periodic adjustments

- From the Home screen or the Power Meter menu screen, select the Settings icon to enter the settings screen.
- Set the date and time for accurate time stamps on saved files.
- Depending on the unit; PM or LS, either the MPO or ORL pass ranges may be set as well as a check box to either indicate the pass range in green on the display or not. To set the pass/fail range, long touch the values to cycle to the desired value.
- When finished, select the Exit icon in the top left of the display.

Section 2 Quick Start Guide

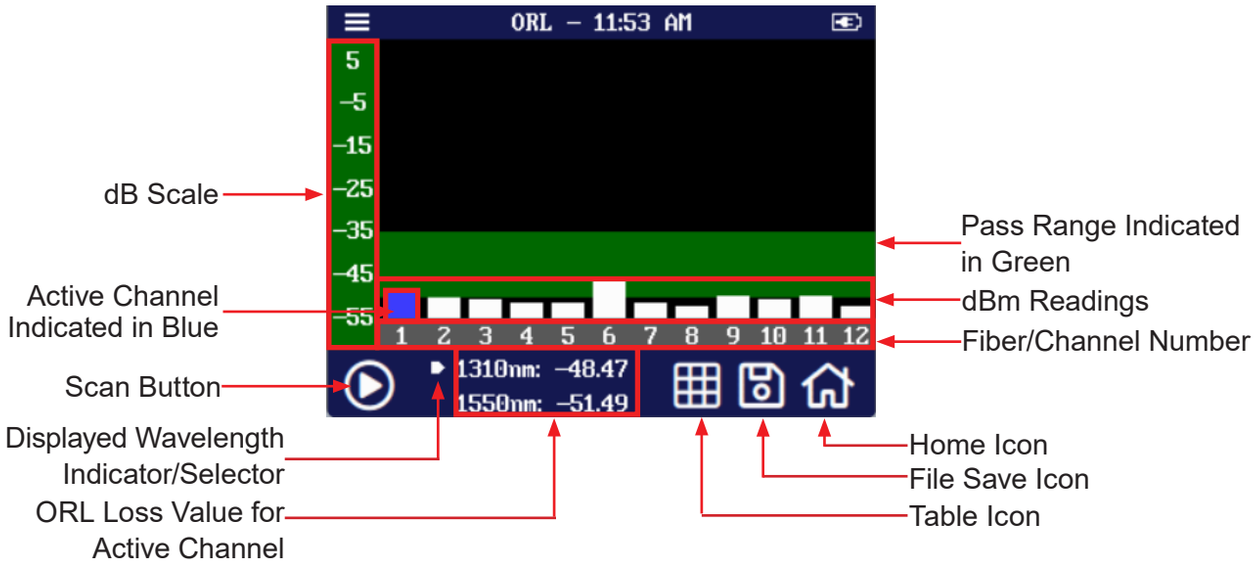
Light Source Operation Screen



Light Source Menu Icon Functions

Video Scope Selector	Select to open the Video Scope function.
ORL Icon	Select the ORL icon to open the ORL feature.
Help Info	Select for information to access FIS manuals, upgrades and training online.
Home Icon	Select the home icon to return to the home screen.

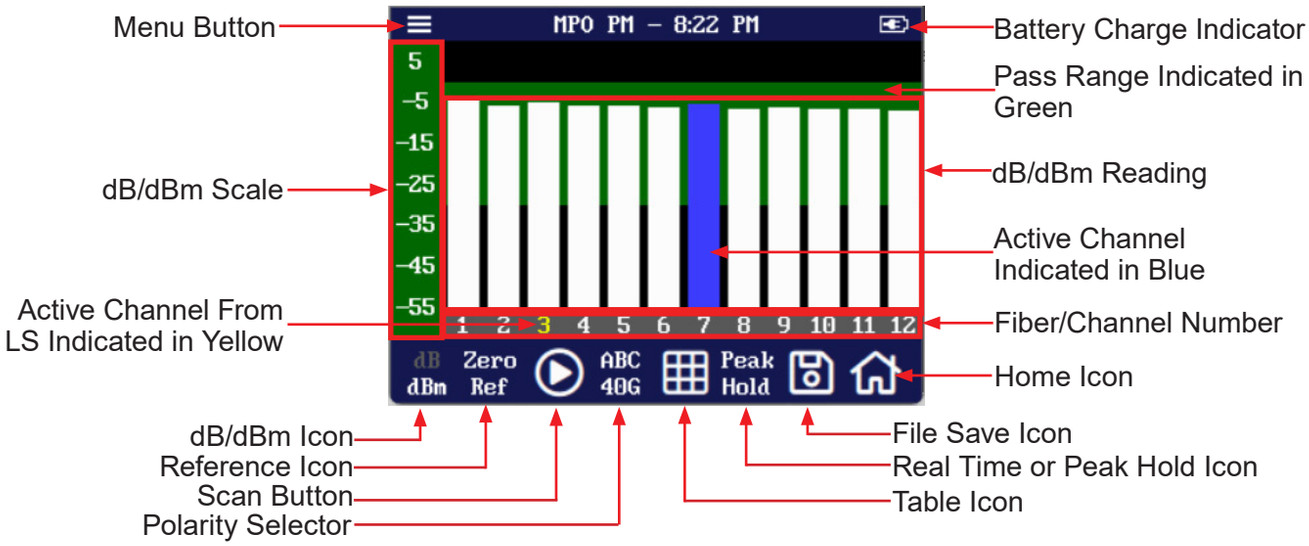
ORL Operation Screen



Scan Button	Toggles between a play arrow and pause bars. Select to Start/Stop an ORL test.
Table Icon	Select the table icon to display the test in table mode.
File Save Icon	Select to open the file save screen.
Home Icon	Select the home icon to return to the home screen.

Section 2 Quick Start Guide

Power Meter Screen with Menu

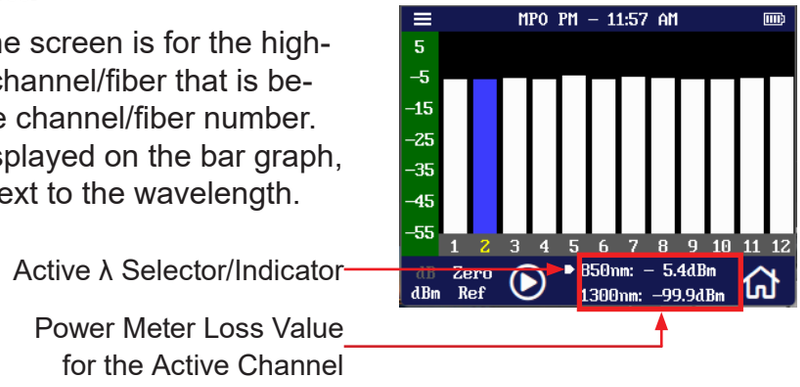


Power Meter Screen Icon Functions

Menu	The menu icon cycles on and off the power meter menu bar
dB/dBm Icon	Use this icon to toggle between dB (referenced loss) or dBm (raw power) readings.
Set Ref Icon	Use this icon to zero out the reference cable when testing for dB.
Scan	Toggles between a play arrow and pause bars. Touching scan puts the power meter in a real time test state and pause freezes the measurements on the screen.
Polarity Icon	This icon opens the polarity screen view of the power meter.
Table	Select the table icon to toggle between Bar Graph, Table, Pass/Fail screens.
RT or PH	In the Bar Graph screen, realeal time shows all new measurements at 4Hz and Peak Hold shows max power on each channel during a light source autoscan.
File Save	Opens the file save screen
Home Icon	Select the home icon to return to the home screen.

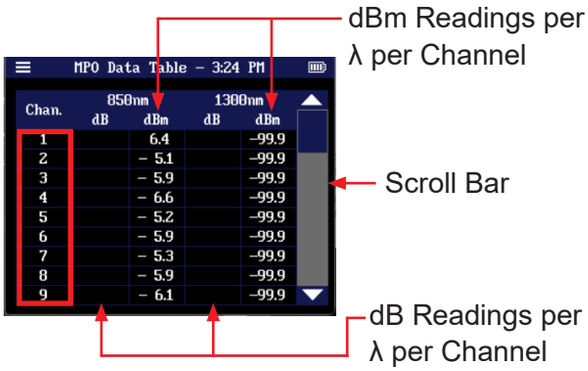
Power Meter Screen with Data

The data displayed at the bottom of the screen is for the highlighted channel/fiber. To change the channel/fiber that is being displayed, touch the bar above the channel/fiber number. To toggle the wavelengths that are displayed on the bar graph, touch the λ Selector/Indicator arrow next to the wavelength.



Section 2 Quick Start Guide

Power Meter Table Mode

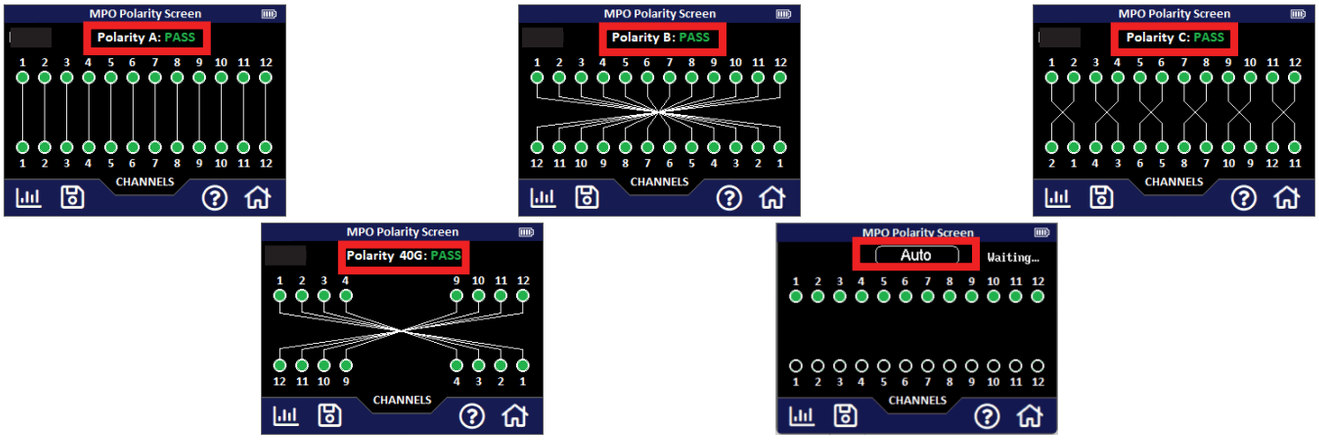


Cable Test Screen

Home Screen --> MPO PM icon --> Select "Zero Ref" to begin test.

While in the menu mode of the bar graph screen, selecting the Table Icon will open the table mode screen and presents a table view of the test results. Use the scroll bar to view channels that are off the screen. To exit the table mode, touch the Menu icon to open the menu icons available in the table screen. Available choices are return to bar graph, exit to the setting screen, save the test or go to the home screen.

Polarity Screens

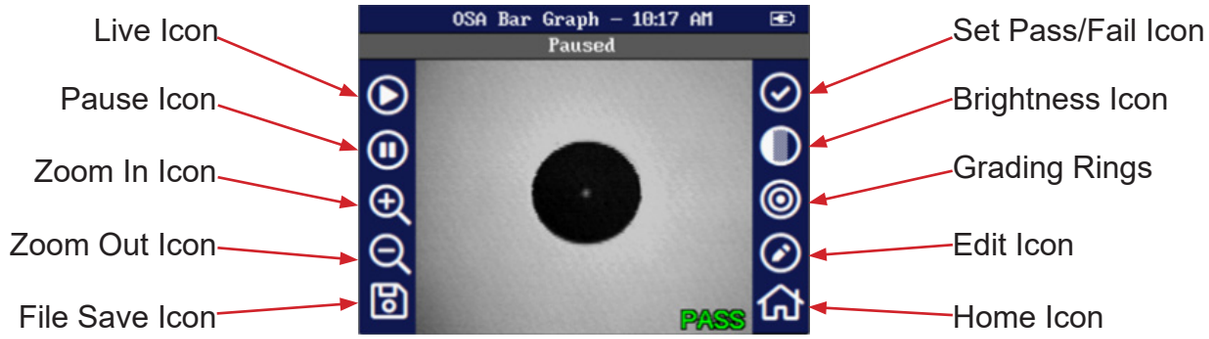


Touching the Polarity icon, will cycle through the different polarity screens. Run a light source autoscan test while in a polarity mode and it will indicate a pass or fail for the fiber positions on that cable.

Section 2 Quick Start Guide

Video Microscope

Video Microscope Icons



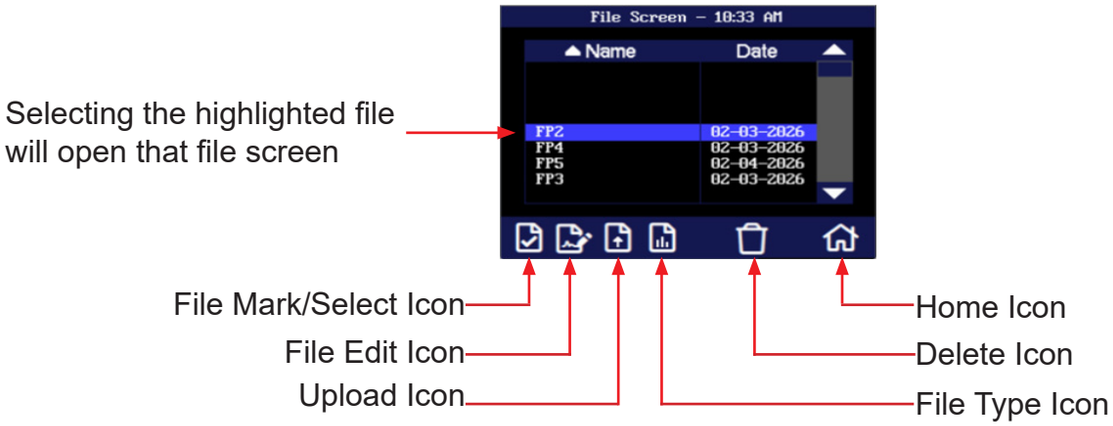
Video Scope Icon Function

Live Icon	Selecting the live icon turns on live or running mode. This is a real time reading of the connector face.
Pause	To freeze an image inspection, select the Pause icon. While in auto of the auto/pass/fail mode, pressing pause will also grade the connector end face and display calculated pass or fail.
Zoom In	Selecting Zoom In increases the image to 250x
Zoom Out	Selecting Zoom Out returns the image to 125X
Save Icon	Selecting the Save Icon opens the file save/naming screen with QWERTY keyboard
Pass/Fail	Selecting the set pass/fail icon while in the live mode will toggle through fail, pass and auto grading markers (Auto will be accomplished by the unit when entering the pause mode.)
Brightness	Selecting the brightness icon will cycle through the brightness levels available.
Grading Rings	Selecting this icon will toggle the grading rings off and on. These pass/fail grading rings are used to assist with manually grading a connector. The rings represent 25um, 120um, 130um and 250um.
Edit Icon	This is used to mark the points of contamination and is accomplished in the paused mode. Available markers will be displayed at the top of the screen. Pick up the marker by using the stylus and touching the contamination sample size that is required. Touch the image where the marker is to be placed. The marker may be fine-tuned with the stylus to cover the contamination point. Once positioned properly, touch the statement “Place marker on image then touch here” to lock marker in place. Repeat this as necessary to mark all the points that need to be indicated for the pass/fail status. At this point the image should be saved as the marks are removed upon returning to live mode.
Home Icon	Select the home icon to return to the home screen.

Section 2 Quick Start Guide

File Management

File Management Screen/Icons



Icon Function/Use

Mark/Select	Selecting this will mark the highlighted file for uploading or deleting.
File Edit	When selected the highlighted file will open in with the QWERTY keyboard for editing.
Upload Icon	Selecting this will upload Marked and highlighted files to the computer through FIS Connect Software.
File Type	This is a toggle and will display PM or ORL files accordingly or video microscope files. Note that the image changes from a bar graph or scope target inset.
Delete Icon	This is a non-recoverable delete key, once selected the marked and highlighted files are erased immediately.
Home Icon	Select the home icon to return to the home screen

Section 3 Introduction

The FIS OV350 MPO Power Meter and Light Source supports 12 fiber MPO connectors, and are available in Multimode or Single mode configurations. It is a two-piece kit that contains a power meter and light source designed to test and certify MPO-style cables quickly and easily. This set will provide the user with link attenuation readings (dB) over the 12 fibers in less than 15 seconds as well as the ability to verify A, B, C, and 40-Gig polarities. These units will work in virtually any MPO application. The power meter has the ability for the user to set defined attenuation thresholds and will display a FAIL if any of the 12 fibers exceeds the threshold. If all fibers are within the threshold, a PASS will be displayed. This unit can also store up to 1,000 test results which can then be transferred via the provided USB cable to the PC reporting software, also included with the set. The provided light source can emit optical signals at a constant rate or with various modulated tones. It is programmed to run an automated looped sequence through all 12 fibers, a manual sequence, or to light up any single fiber. The light source offers a visible light source that is presented in CW or modulated modes through the MPO connector. The power meter offers a standard single fiber VFL. Both units support the FIS video inspection probe with the optional MPO adapter.

Section 4 Preparation For Use

4.1 Inspection

Before shipment, this instrument was inspected and found to be in perfect working order and free of defects.

The shipping carton contains the following:

1. OV350 MPO PM and OV530 MPO LS
2. 2 ea. USB 5V, 3.4A chargers
3. 2 ea. USB C cable
4. Quick Reference Guide

4.2 Identification and Configuration

Each instrument's Model/Part Number, Serial Number and Date of Manufacture are indicated on a label located on the back of the unit. The instrument's history is filed at the factory by model/part number and serial number.

4.3 Power Requirements

The OV350-MPO Lost Test Set is equipped with a 8000mAh Li-Poly battery. It is also supplied with a 100-240V USB power adapter with 5VDC, 3.4A output. A fully charged Li-Poly battery will typically enable approximately 10 hrs. of use and require approximately 4 hours of recharging.

Warning

To Prevent Fire or Shock Hazard:

- Batteries are not field replaceable, equipment must be returned to the factory for battery replacement
- Do not use the charger without the batteries installed
- Do not expose the battery charger to rain or excessive moisture
- Do not use the AC adapter when there are signs of damage to the enclosure or cord
- Ensure that you are using the correct charger for the local line voltage

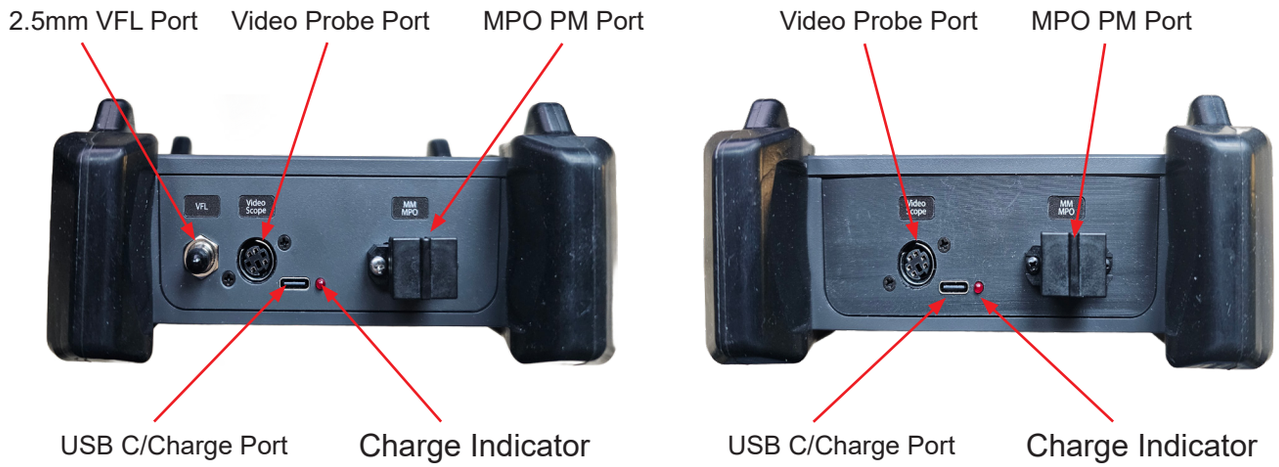
Failure to follow these caution statements may void the warranty of this equipment.

Section 5 Physical Description

The MPO PM and LS are packaged in a rugged housing which is further protected with a rubberized boot. Although the front panel is weather resistant, care must be taken to avoid liquids and contaminants around the fragile optical and electrical connectors, and the glass display. Use a mild cleaning agent and damp soft cloth to clean the panels and the outside case. See the maintenance section for notes to clean the optical connector. NEVER open the instrument for cleaning. Return to the factory for servicing if necessary.

Front Panel OV350 PM and LS

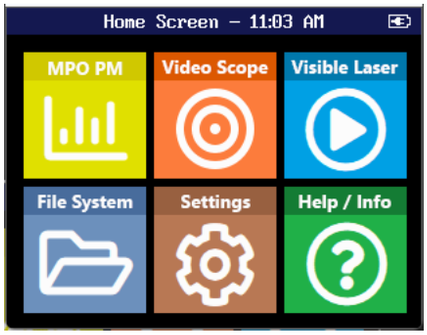
Top Plates



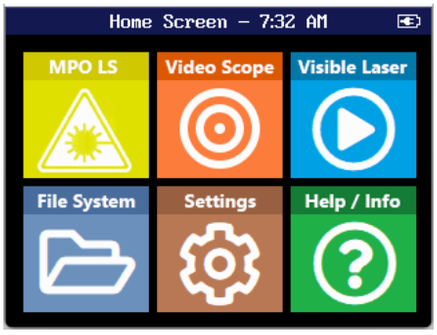
Section 6 User Interface

6.1 Home Screen

OV350 PM



OV350 LS



Home Page Icons

On the power meter, select the PM Icon to enter the power meter module.

On the light source Select the LS Icon to enter the light source module.

Select this video scope icon to enter the video scope module.

The visible laser can operated directly from the home screen, simply touch the Visible Laser icon and toggle through CW, modulated and off. The LS also has a 12 fiber scanning mode.

File management icon opens full file management module, vs. the simple file save screens available from the video scope modules.

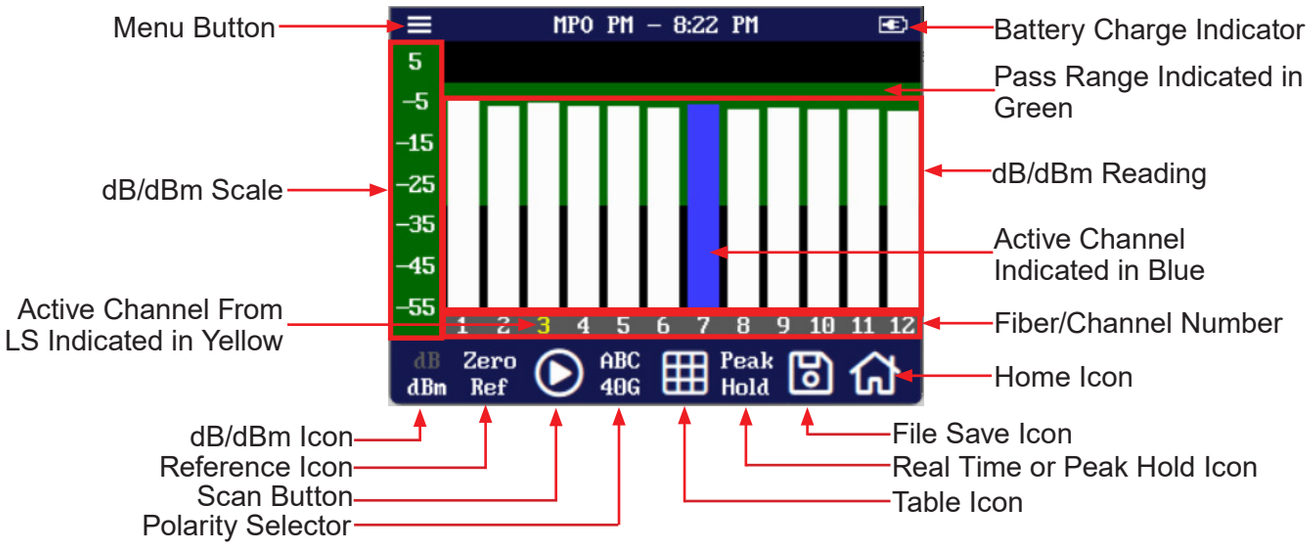
Settings icon opens the settings page.

The Help icon offers the user a link to Fiber Instrument Sales manuals and training online.

Section 6 User Interface

6.2 Power Meter Screen

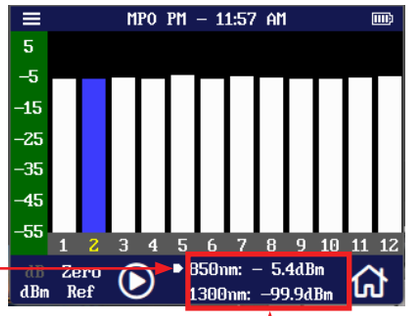
Power Meter Bar Graph Screen With Menu Open



dB dBm	dB/dBm Select	Toggle between dB and dBm readings
Zero Ref	Zero Ref	Touch this icon to zero the reference cable and switch to dB mode
	Scan	Start Scan, hold 2 seconds for continuous scanning.(replaced by pause icon below when Scanning)
	Pause	Pause Scan (replaced by scan icon above when in Pause Mode)
ABC 40G	Polarity Screen	Opens the polarity test screens
	Table	Opens the table mode (When in table mode, bar graph icon below is displayed)
	Bar Graph	Display while in the table modes to return to bar graph mode.
Peak Hold	Realtime/ Peak Hold	Real time shows all new measurements at 4Hz and Peak Hold shows max power on each channel during the scan.
	File Save	Opens file save screen with QWERTY keyboard
	Home	Returns to the home screen

Power Bar Graph Meter Screen with Data

The data displayed at the bottom of the screen is for the high-lighted channel/fiber. To change the channel/fiber that is being displayed, touch the bar above the channel/fiber number. To change the wavelength that is displayed on the screen, touch the λ Selector/Indicator arrow next to the wavelength.



Active λ Selector/Indicator

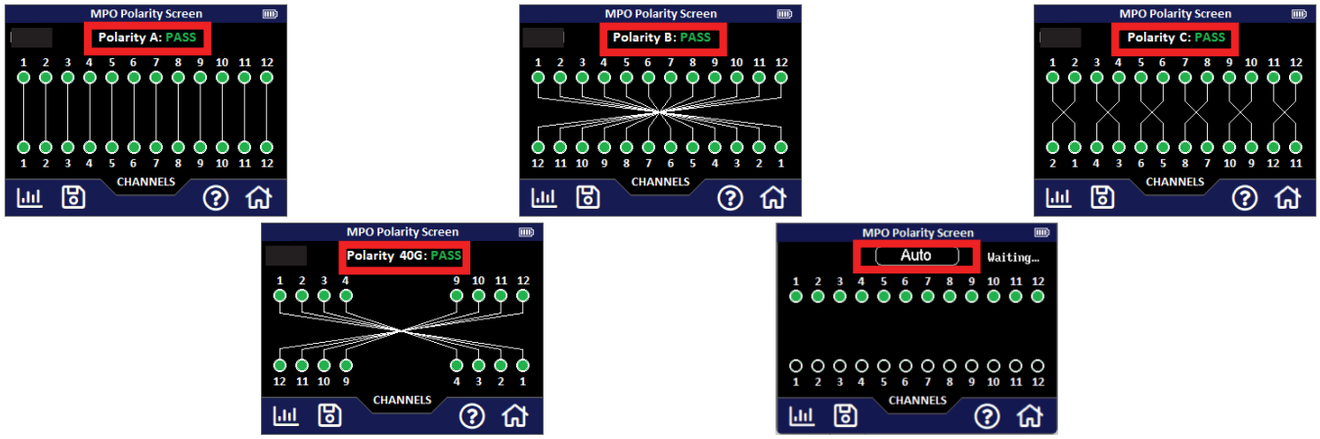
Power Meter Loss Value for the Active Channel

Power Meter Table Mode

Selecting the Table icon while in the menu mode of the bar graph screen will open the table mode screen and presents a table view of the test. Use the scroll bar to view channels that are off the screen. Touch the Menu icon in the top left of the display to display the menu at the bottom of the table. The menu icons available in the table screen are return to Pass/Fail screen, exit to the setting screen, save test or exit to the home screen.

Section 6 User Interface

Polarity Screens

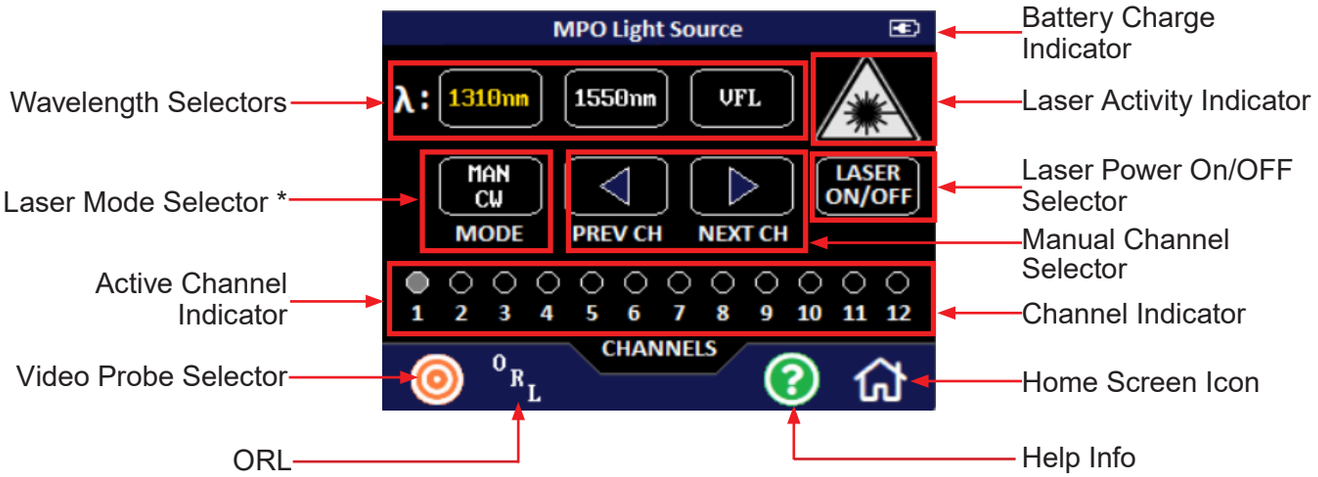


Touching the Polarity icon, will cycle through the different polarity screens. Run a light source autoscan test while in a polarity mode and it will indicate a pass or fail for the fiber positions on that cable.

Menu icons are available in each of the polarity screens, The available icons are Return to Bar Graph, Save Test, Help and Home.

6.4 Light Source Screen

Light Source Operation Screen



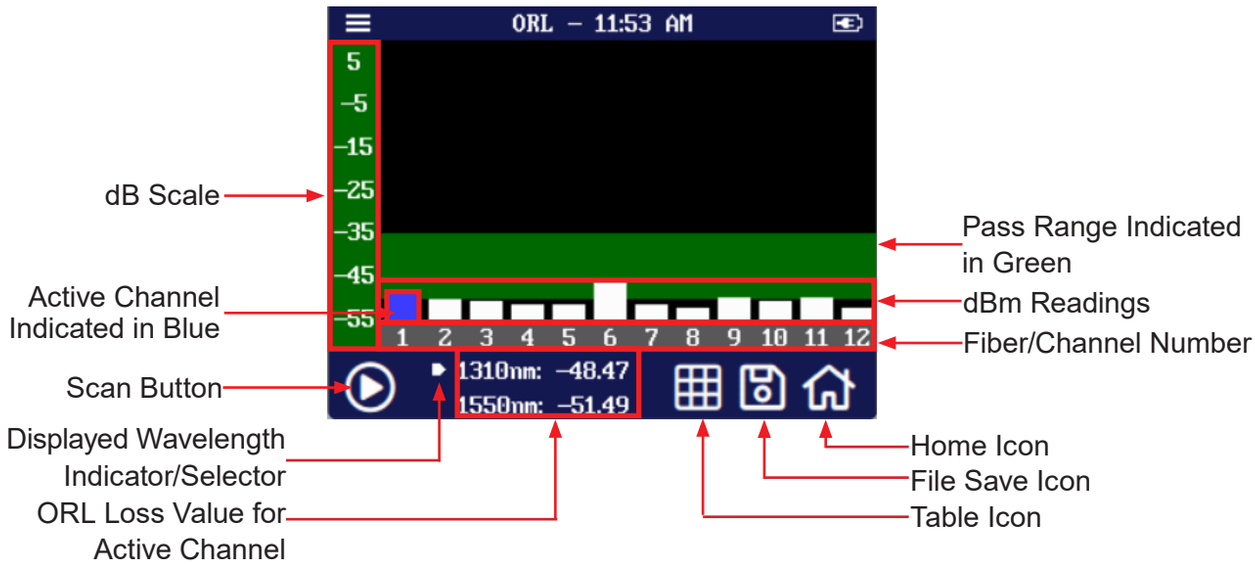
* Laser Mode Selector toggles between SEQ - cycles through channels 1 to 12, MAN CW/270/1k/2k - select which channel to energize, AUTO TEST - scans each channel at both wavelengths.

Section 6 User Interface

Light Source Menu Icon Functions

	Video Scope	Opens video scope function
ORL	ORL (SM Only)	Select to open SM ORL Screen
	Home	Returns to the home screen
	Help	Select for information to access FIS manuals, upgrades and training online.

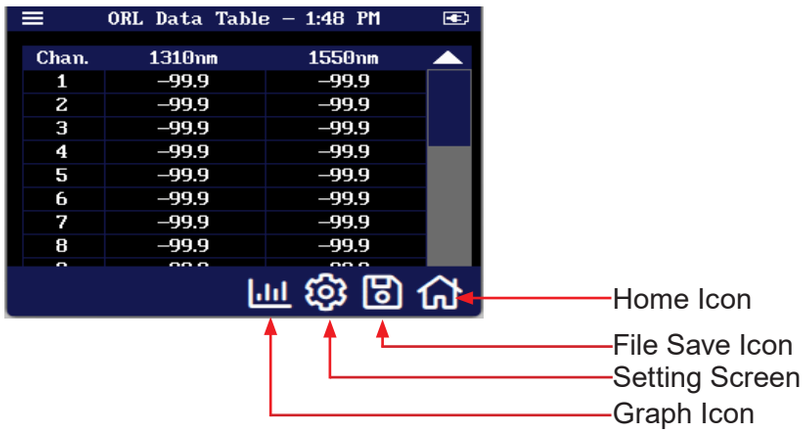
ORL Operation Screen



Scan Button	Toggles between a play arrow and pause bars. Select to Start/Stop an ORL test.
Table Icon	Select the table icon to display the test in table mode.
File Save Icon	Select to open the file save screen.
Home Icon	Select the home icon to return to the home screen.

Section 6 User Interface

ORL Table Displayed with Menu Open



Graph Icon	Select to the bar graph screen
Settings Icon	Select to open the settings screen
File Save Icon	Select to open the file save screen.
Home Icon	Select the home icon to return to the home screen.

Section 7 Power Meter and Light Source Operation

7.1 Start-up

Press and hold the power button for one second to start the OV350-MPO power meter and light source.

Warm-up

There is no warm up period with these units, however, the light source does require approximately 5 minutes of active source time to stabilize.

Before making any test or referencing out the reference cable, place the LS in auto mode and let the source cycle through in SEQ MODE for roughly five minutes to stabilize the power output.

“In certain temperature conditions especially when using the Single mode test kit, it may be necessary to re-reference roughly 10 minutes after the initial reference. As is the case with any light source & power meter setup, if at some point the test results seem skewed or unexpected, the primary tactic is to re-referencing the source to the meter.

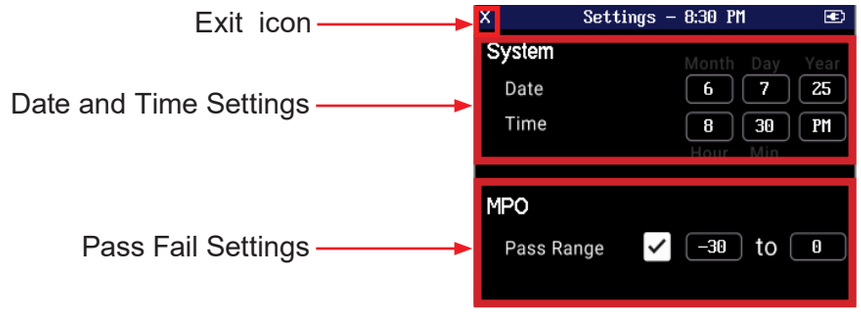
Make sure to always practice proper cleaning procedures on all connectors and equipment during this process.”

7.2 Settings Screens

The power meter and light source have setting screens that are accessible from the home screen. The PM allows for setting the date and time and a pass fail range on the MPO test. The LS allow for setting the date and time and the pass fail for the ORL meter. The Power meter setting screen is below showing the MPO Pass Range , The light source operates in the same manner with the exception of MPO info being replace by ORL info.

Select the Settings icon to open the settings screen.

Settings Screen



Section 7 Power Meter and Light Source Operation

Set Date and Time

To ensure proper date and time stamps on saved files, set date and time to local time zone.

To set the date and time, long hold the date and time fields to scroll through available numbers until the proper information is displayed.

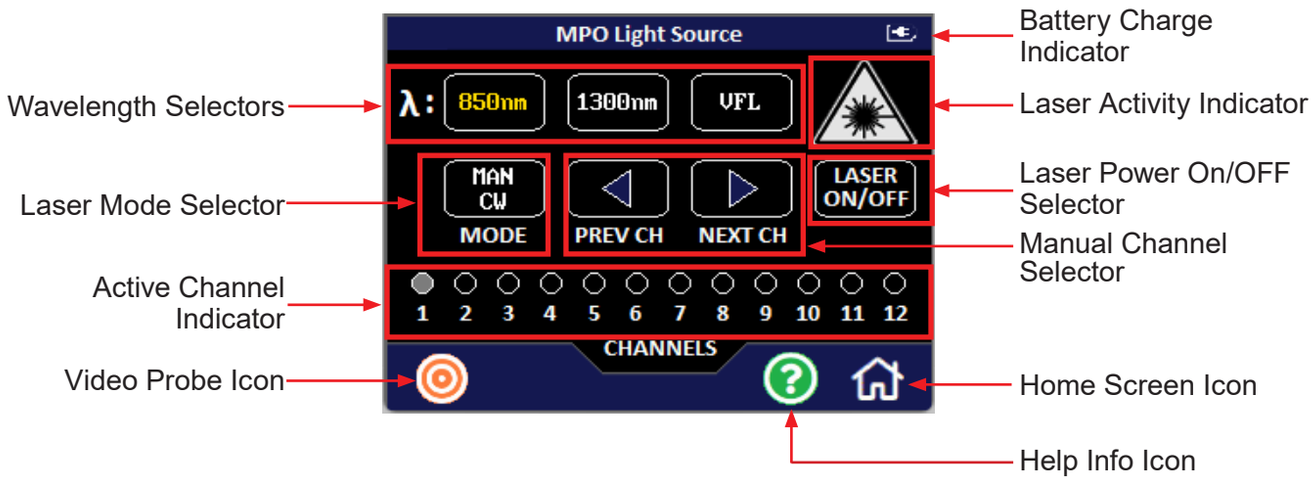
Set MPO and ORL Pass/Fail Ranges

To set the MPO and ORL pass ranges long press the available limits to cycle to the desired passing criteria.

For a quick indication of passing channels, a green shaded pass range may be set to highlight the power level on the display for a passing channel.

Use the check box to turn on or off the green shaded pass zone indicator.

7.3 Light Source Operation



Wavelength Selectors

Select wavelength with the Wavelength Selector buttons. 850nm/1300nm along with a 650nm VFL are available on the MM units and 1310nm/1550nm and 650nm VFL are available on the SM units.

Laser Activity Indicator

When the laser is activated with the Laser On/Off button, the laser activity indicator will illuminate in yellow.

Section 7 Power Meter and Light Source Operation

Laser Mode Selector

Select the laser mode with the laser mode selector button. There are a number of options available to the user.

Available Test Modes

- SEQ - Sequences through the 12 channels for the highlighted wavelength
- MAN CW - Allows for manual selection of a channel, in CW mode at the highlighted wavelength.
- MAN 270 - Allows for manual selection of a channel, at 270Hz modulated mode, at the highlighted wavelength.
- MAN 1KHz - Allows for manual selection of a channel, at 1kHz modulated mode, at the highlighted wavelength.
- MAN 2KHz - Allows for manual selection of a channel, at 2kHz modulated mode, at the highlighted wavelength.
- AUTO TEST - Sequences through the 12 channels at both wavelengths. All 12 channels at the first wavelength, then all 12 channels at the second wavelength.

Prev and Next Channel

Cycle through the Channels, up or down, one step at a time.

Laser On/Off

Toggles on and off the laser

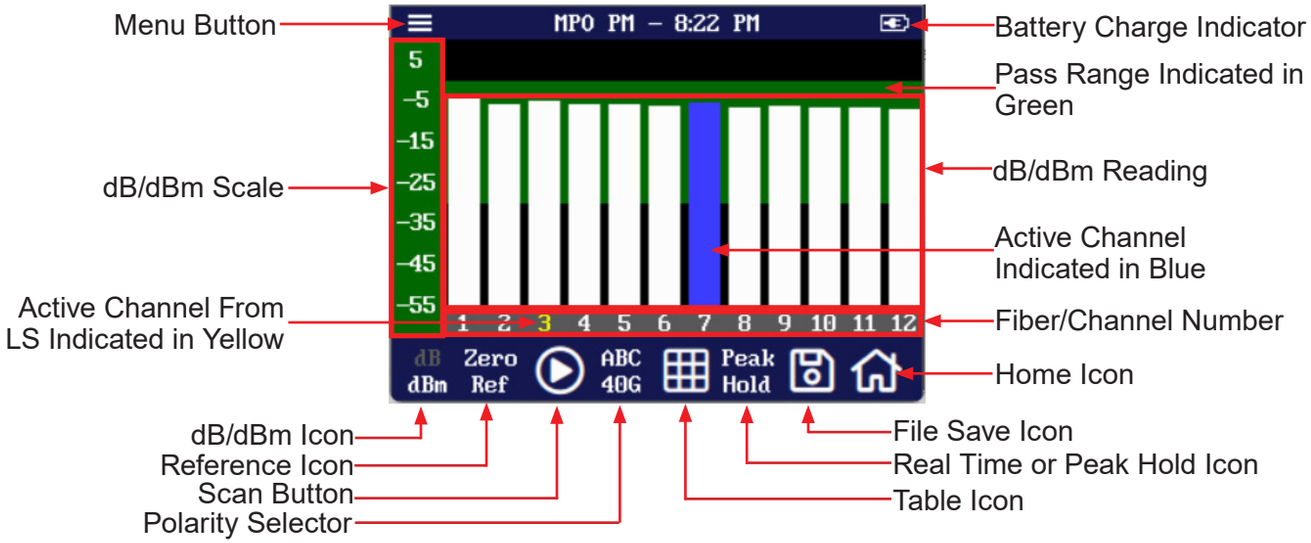
Active Channel Indicators.

These active channel will show in green. Touching these indicators may also be used to directly select a channel while in manual modes.

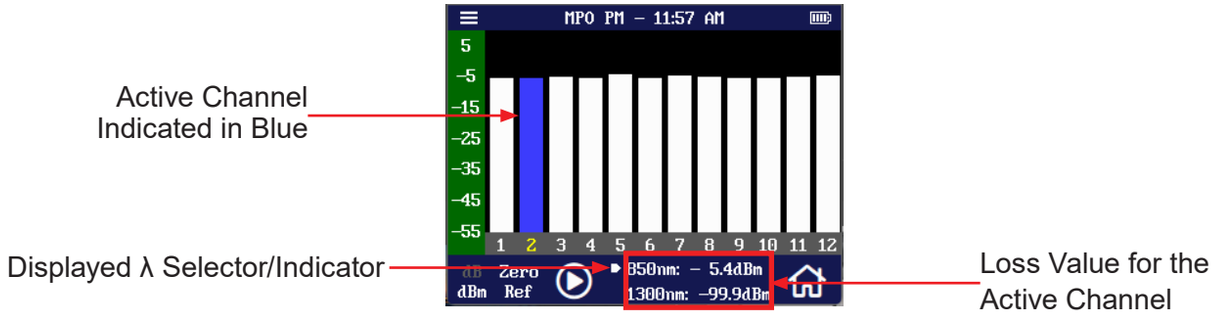
Section 7 Power Meter and Light Source Operation

7.4 Power Meter Operation

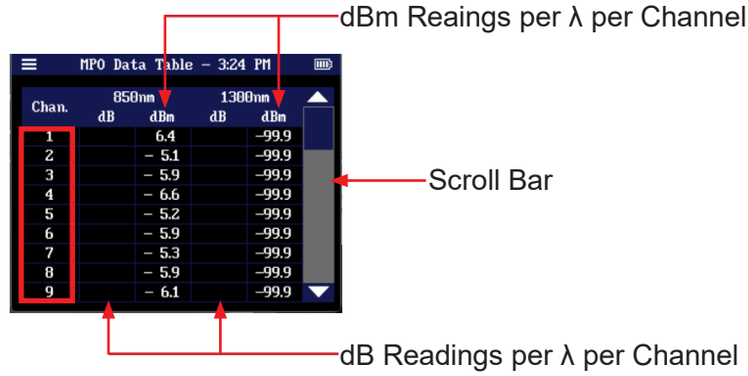
Power Meter Bar Graph Screen With Menu Open



Power Meter Screen with Data



Power Meter Table Mode

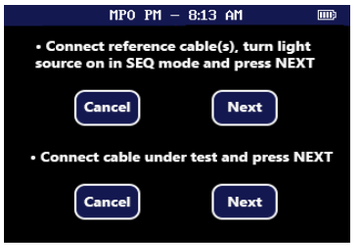


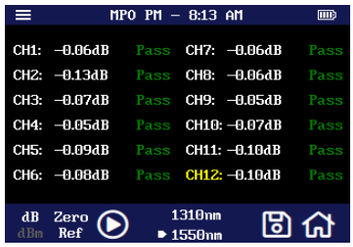
Section 7 Power Meter and Light Source Operation

7.5 Zero The Reference Cables

Cable Test Screen

Home Screen --> MPO PM icon --> Select “Zero Ref” to begin test.





While in the menu mode of the bar graph screen, selecting the Table Icon will open the table mode screen and presents a table view of the test results. Use the scroll bar to view channels that are off the screen. To exit the table mode, touch the Menu icon to open the menu icons available in the table screen. Available choices are return to bar graph, exit to the setting screen, save the test or go to the home screen.

On power up of the power meter and light source, zeroing out or referencing out the reference cables is required. The connectors on these units are male connectors. After inspecting and cleaning, attach a female reference cable to the PM and another to the LS. Use an adapter to connect the two cable together.

It is suggested that test or reference cables be used between the fiber under test and the OV350-MPO PM and LS. This reference fiber should be approximately one meter in length and have minimal loss. The reference cable should only be removed from the unit when necessary. Limiting removal and termination of connectors to the unit will extend the live span of the panel connectors eliminating down time and costly repairs.

Fiber-optic connectors are easily contaminated or damaged. The connection to the OV350-MPO Lost Test Set is a physical contact type of connection and dirty or damaged connectors may impair the instruments capabilities at minimum and at worst result in the need to return the OV350-MPO Lost Test Set to the factory for expensive repairs. Prior to making any connection to the unit, ensure that all proper cleaning procedures have been followed.

The OV350-MPO test units are supplied with male type, 12 fiber MPO connectors. MM units have flat connectors while SM units are supplied with Angled connector. Always make sure the connectors attached to the units match this standard. Using the wrong connector can damage the port/connection and require sending the unit back to the manufacture for repair.

Once the source has stabilized after five minutes, connect your Type A polarity reference cords (provided) to the power meter and light source. Use the provided mating sleeve in the kit to connect the two reference cords together between the meter and source (male to female).

While the light source is sequencing through auto mode, turn the power meter on and confirm that the meter is reading power (dBm) on each channel,

Once all the channels have been fully populated with data values on both wavelengths, the Zero Ref icon may be pressed. This will zero out the loss value of the reference cables.

At this point the dB/dBm button can be used to change the reading from an absolute reading of dBm to a relative reading of dB.

Once the reference is complete, disconnect the reference cords from each other in the middle and introduce the cable under test in between them.

Section 7 Power Meter and Light Source Operation

7.6 Scanning

With the cable under test introduced between the two reference cords, a test may be performed.

Select The Desired Test

Bar Graph

Select the desired output on the light source with the laser mode selector. The PM will store the highest value on each wavelength until a new mode is selected or a test is saved.

To view the value of each channel with indication of passing or failed channel, use the menu icon in the top left of the display and select the Table icon.

To save a test, touch the File Save icon in either the bar graph or table mode and enter the desired name, up to 16 characters and touch save.

Polarity Test

Select the desired polarity screen on the power meter and then the auto test on the light source. The source will cycle through the test channels and “waiting” will be indicated in the top right of the polarity screen. Once the test is complete a pass or fail will be display in its place and the channels numbers will be highlighted with either a green or red indicator.

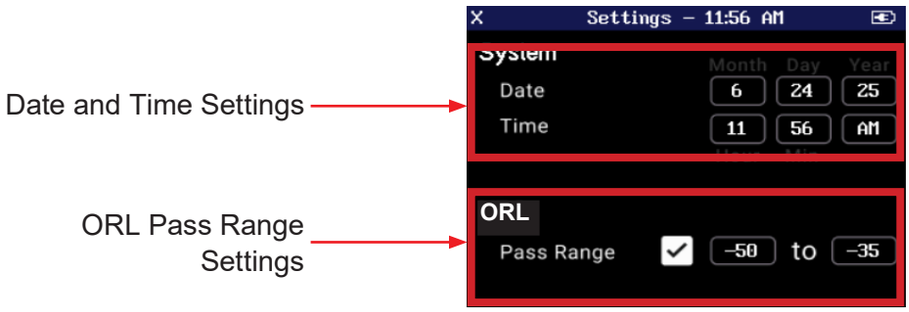
The file may be saved by touching the File Save icon on the bottom of the display.

Section 8 ORL Testing

8.1 ORL Setup Screen

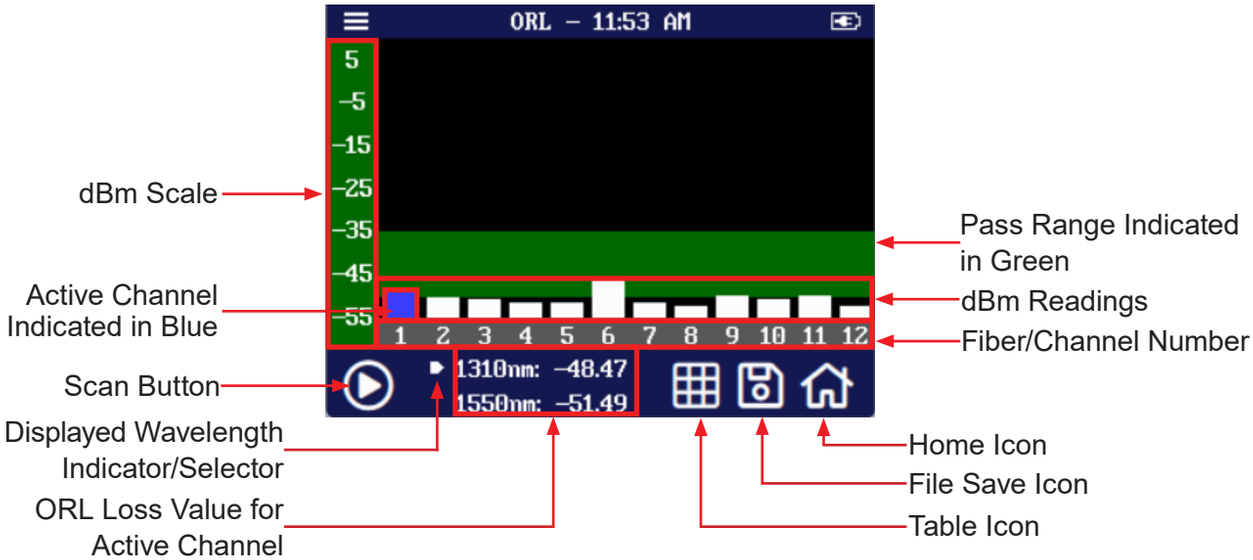
Enter the setup screen on the light source and set the desired pass/fail range by long touching the displayed values to cycle through available settings.

Select the check box to display the pass fail range on the ORL display screen.



8.2 ORL Operation Screen

Select the ORL icon on the main LS screen. The below screen will be displayed.
Select the check box to display the pass fail range on the ORL display screen.



Section 8 ORL Testing

8.3 ORL Operation

Test Reference Cable

Connect a reference cable to the light source port and then touch the Scan Button. The source will cycle through the wavelengths and channels. With a patch cord or breakout cable with unterminated UPC Connectors, the ORL values should be approximately 14dB. This indicates the light source is stable, and the test cable is in good working order.

Conduct a Scan

Connect the reference cable to the fiber under test and select the Scan button. The ORL meter will cycle through the 12 channels at each first 1310nm then 1550nm and display the data in graph form.

Once the test is complete the Table icon may be selected to display the information in a table format similar to the power meter. To return to the bar graph mode, touch the Menu icon and select the Bar Graph icon.

Save a Test

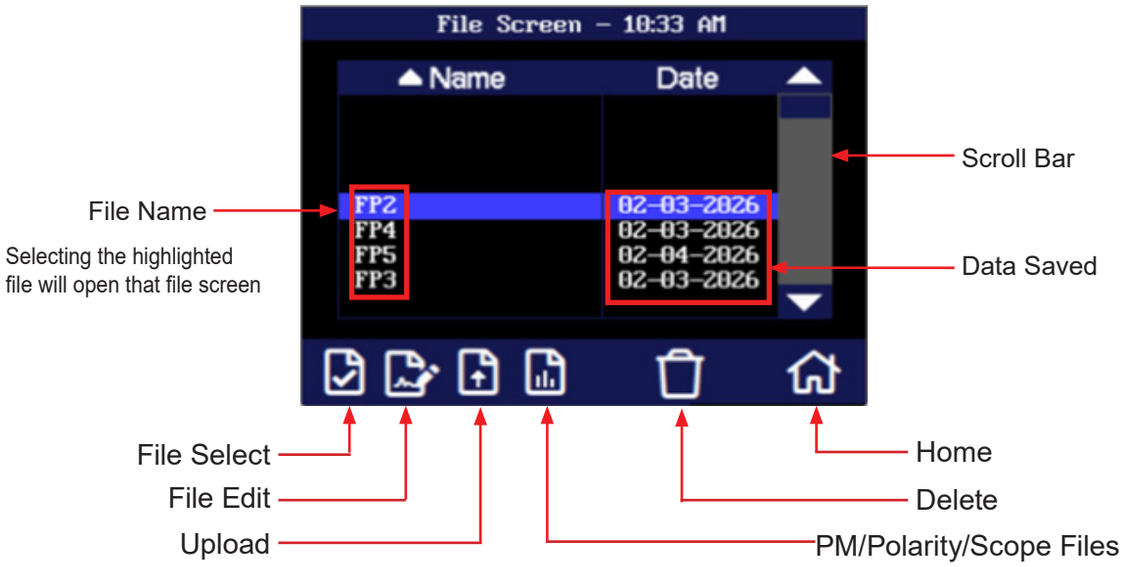
To save a test, from either the graph or table screens, select the File Save icon and the file naming screen will be displayed. Enter a file name up to 16 characters long and select the green check to save or red x to cancel.

Section 9 File Management

File Management is accessed through the home screen menu. To open the file management screen, bring up the home screen menu and touch the File System icon.

9.1 File Management Screen

Main File Management Screen



File Management Menu Icons

	File Select	Marks a file for an action/operation
	File Edit	Opens a file name to be edited
	Upload	Uploads marked files to FIS Connect software
	Files	Indicates files displayed, Bar Graph icon indicates dB/dBm files. If selected, it will be replaced by the Video Scope Files icon indicating the video scope files are being displayed. On the power meter selecting the icon again will display a “P” icon indicating the Polarity files are being displayed. Selecting this icon continuously will cycle through the available files.
	Delete	Deletes marked files
	Home	Returns to the home screen

Section 9 File Management

File Naming and Editing Screen (QWERTY Keyboard)

9.2 Saving files

To save a file while in the ORL, Power Meter, or video scope screen, select the File Save icon and enter the file name (up to 15 characters) then select Save on the QWERTY screen. When powered up, the default file name will be “Default”. After the first file is saved, during that session, the new default will be the last file saved. When the equipment is powered off, the default file name will revert to “Default”. The ORL/PM and video scope are independent and will each store their own file names.

9.3 File Management Operations

File Select
Multiple files may be uploaded (copied) to a computer, or deleted at a time. To mark the files for these operations, highlight a file to be included in the operation and touch the File Select icon. The highlighted filename will now be displayed in yellow and the next file will be in the highlighted position. Continue selecting files by touching the select icon. To skip files simply move down the file list until the next file to be marked is highlighted and touch File Select again. The file select is a toggle and to unmark a file, place it in the highlighted position and touch File Select again and it will be unmarked. Once the files are selected touch the icon for the delete or upload functions.

Note: If files have been marked for batch processing, only the marked files are process not the highlighted file as in single file processing. (The last file in a list may be marked when in the highlighted position) If only one file is to be process, having it in the highlighted position will be sufficient.

Section 9 File Management

File Edit
With a file highlighted, select the File Edit icon and the file will be opened in the QWERTY keyboard screen. Make file name changes as necessary and select Save.

Upload Files
The upload files icon is used to send files to the computer for use with the FIS Connect software suite. One or more files may be uploaded at a time. Use the mark (select) feature to select multiple file or have the file to be uploaded in the highlighted position. With the PM or LS connected to the computer with the USB cable, and the FIS Connect software running touch the upload icon and the files will transfer to the selected folder on the computer.

View Files
The Bar Graph File icon will be displayed when dB/dBm files are being viewed, to switch to video scope files, select the Bar Graph File icon and the Video Scope Files icon will now be displayed. On the PM, select the Video Scope Files icon and the “P” (Polarity) icon will be displayed to indicate the polarity files are being shown. Double tap on a file name to view it in the in the appropriate screen.

Delete Files
To delete a single file, with the file name in the highlighted position, touch the delete icon. To delete a group of files, mark all files to be processed and press the delete icon.

Note: Once the delete icon is selected, files are immediately deleted and they can not be recalled.

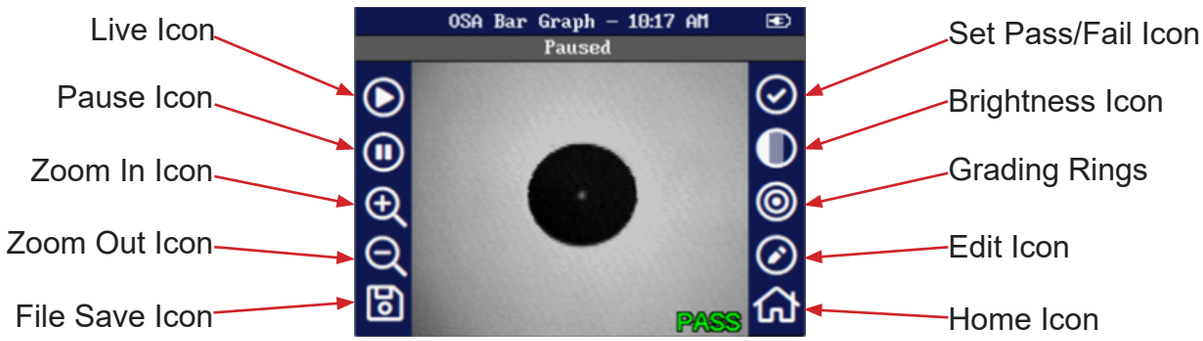
Exit
Select the Home icon to return to the home screen.

Section 10 Video Scope Operation

Select Video Scope icon from the home screen.

10.1 Video Scope Screen

Video Scope Screen



Video Scope Icon Function

	Live	Selecting the live icon turns on live or running mode
	Pause	Selecting pause freezes an image in position and focus level for inspection, also runs auto pass/fail when set to auto.
	Zoom In	Toggles image to 250x
	Zoom Out	Toggles image to 125x
	File Save	Selecting this icon opens file save to the QWERTY keyboard
	Set Pass/Fail	Sets pass, fail and auto grading markers
	Brightness	Selecting the brightness icon will cycle through the brightness levels available
	Grading Rings	Selecting this icon will toggle the grading rings off and on
	Edit	This is used to mark the points of contamination on image
	Home	Returns to the home screen

Section 10 Video Scope Operation

10.2 Video Probe Operation

To operate the video scope, touch the Scope icon on the Home Screen. If a probe is not connected already, connect the Video Probe to the video probe port on the top of the unit.

Video Probe Tips
There are a number of video probe tips available. To remove a tip from the Probe, grasp the probe tip and unscrew the tip retention nut from the tip. Pull the tip straight up from the probe. To place a tip on the probe, ensure the lens is clean, slide the tip on to the end of the probe and tighten the tip retention nut. Do not overtighten the retention nut.

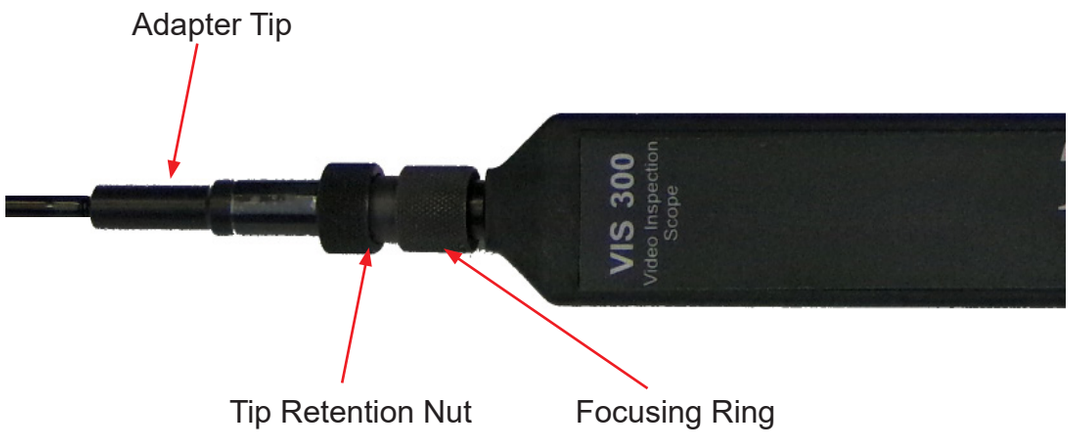


Fig 11.1

Viewing/Focusing a Connector
With the video scope turned on and the video probe plugged into the unit, insert a connector in to the tip or insert the panel adapter tip into the appropriate port. The scope must be in the live scanning (“Running” noted at the top of the display) mode to make focus adjustments. Use the focus ring to get the connector image as sharp as possible. When using panel adapters it is possible to turn the body of the probe while the adapter is inserted into the panel to make focus adjustments.

NOTE:
To auto center the image, touch the center of the connector core image and the connector will move as close as possible to the center of the display.

Section 10 Video Scope Operation

11.3 Video Scope Operation

Live / Pause
The scope starts up in live (Running) mode. To pause or freeze the image, select the Pause icon. Live is a real time viewing of the connector end face. Most features are available in live mode, however editing (marking contamination) is not.

Zoom In - Zoom Out
Select the Zoom In icon to increase the magnification to 250x. Selecting the Zoom-Out icon will return the image to 125x.

File Save
Selecting the File Save Icon opens the file save/naming screen with QWERTY keyboard. Enter the file name as desired, upon starting the unit, the default file name is “Default”. This will be the case every time the unit is powered on. Once a file is saved, the default file name is the previous saved name. There is a limit of 15 characters to file names. Once the file name is entered, select the Save (check mark) button. To back out without saving, select the Cancel (X) button

Pass/Fail Icon
Use the pass/fail icon to mark the connector image in live mode (running). Selecting the icon will cycle through fail, pass and auto. If set to auto, this allows the smart grading system to evaluate the connector. To start the auto pass fail process, with the image as close to centered as possible, select the Pause icon. The video scope will attempt to auto center then run the test and display a pass or fail label.

Note: If the connector shows all red or the test fails to complete, maneuver the probe tip to allow for centering of the image and retry the test.

Brightness
Touch the Brightness icon to cycle the brightness levels for best image quality. The brightness could affect the auto analysis.

Grading Rings
Turn on and off the grading rings when in live (running) mode. by selecting the Grading Rings Icon. These are use to indicate the IEC61300-3-35 grading zones. These pass/fail grading rings are used to assist with manually grading a connector. The rings represent 25um, 120um, 130um and 250um. Use Pass/Fail Criteria Tables on the following page to help grade the connector end face. 2, 3, 5 and 10 micron contaminant examples are displayed when the edit icon is active.

Edit (marking contamination points)
To mark the points of contamination the unit must be in paused mode. Pick up the contamination marker by using the stylus and touching the contamination sample size that is required. Touch the image to place the marker. The marker may be fine-tuned with the stylus to cover the contamination point on the image to be marked. Once the marker is positioned properly, touch the area just above the image that states “Place marker, touch here to apply” to lock the marker in place. Repeat this as necessary to mark all the points that need to be indicated for the pass/fail status. At this point the image should be saved, the markers will be cleared with the next scan.

10.5 Pass/Fail Criteria Tables

Fiber End Face Criteria Table

Zone	Description	Diameter	Allowable Scratches (Width)	Allowable Defects (Diameter)
A	Critical Zone	0µm to 25µm	None	None
B	Cladding Zone	25µm to 120µm	No limit ≤ 3µm None > 3µm	No Limit < 2µm 5 from 2µm to 5µm None > 5µm
C	Adhesive Zone	120µm to 130µm	No limit	No limit
D	Contact Zone	130µm to 250µm	No limit	None ≥ 10 µm

Section 11 Visual Fault Locator

11.1 VFL Safety

Caution

This Visual Fault Locator is classified as a Class II laser system and must be used with all commensurate safety precautions. Never view the light emanating from the fiber directly. Place a white piece of paper at the end of the fiber and look for the presence of a red spot on the paper.

11.2 VFL Description

The Visual Fault Locator emits visible (red) light at the 650 nm wavelength. Its intended function is to allow an operator to identify the exact location of a break, micro bend, or other discontinuity in a fiber optic cable. As the radiation is visible, light emanating from a break or micro bend enables the user to locate the exact position of a fault even at very short distances that would not be detectable by conventional means such as an Optical Time Domain Reflectometer, (OTDR). It is also useful for identifying a particular fiber in a cable by exciting the fiber to be located with visible radiation.

11.3 VFL Operation

The Visual Fault Locator is accessed from the Home screen on both the PM and LS..

The fiber to be tested is connected to the VFL port by means of a standard 2.5 mm fiber optic connector. On the PM, the source may be used in one of its two modes, modulated or continuous. In the modulated mode the laser is turned on and off at a 2 Hz rate. This mode is helpful in permitting the user to identify the source radiation in the presence of high levels of ambient light. It also aids in conserving battery life.

The usable range for fault location depends on many factors, the type of fiber, the type of cable, the overall loss. To activate the VFL, tap the VFL icon to cycle through the available states of off, continuous and modulated. An active laser symbol is displayed next to the battery indicator, steady illumination for CW mode and flashing indicator for modulated mode.

Section 12 Maintenance

12.1 Battery Replacement

The battery of the OV350-MPO Lost Test Set is not field replaceable please call the factory for an RMA to replace the battery.

Warning

To Prevent Fire or Shock Hazard:

- Batteries are not field replaceable, equipment must be returned to the factory for battery replacement
- Do not use the charger without the batteries installed
- Do not expose the battery charger to rain or excessive moisture
- Do not use the AC adapter when there are signs of damage to the enclosure or cord
- Ensure that you are using the correct charger for the local line voltage

12.2 Calibration and Verification

Periodic verification of the OV350-MPO Lost Test Set is recommended to ensure that your instrument remains within specification. Although not imperative, we recommend a calibration and verification once a year to make certain the instrument is functioning properly and performing to its rated specifications. Consult the factory for service.

Section 13 Specifications

SPECIFICATIONS	
Power Meter	
Unit of Measure	Power - dBm / Insertion Loss - dB
Detector Type	12 InGaAs Photodiodes (λ range 800nm to 1700nm)
Calibrated Wavelengths	850nm & 1300nm MM Version 1310nm and 1550nm SM Version
Dynamic Range	+5dBm to -50dBm
Resolution	0.01dB
Accuracy	± 1dB
Polarity Detection	A, B , C and 40G
Test Storage Locations	1000
Data Transfer	USB Serial Cable (Via USB C)
Optical Connector	Multimode - MPO Male UPC (Compatible with 62.5um and 50um) Singlemode - MPO Male APC (Compatible with 9um) (Both SM and MM Units have Self Closing Bulkhead)
Light Source	
Lasers	Multimode: 850/1300 , Singlemode 1310/1550
Output Power	-5dBm typ
Modulation Modes	Continuous Wave, 270Hz, and 1kHz and 2kHz
Stability	± 0.2dB
Laser Safety Classification	Class I FDA21 CFR1040.10 & 1040.11 IEC 825-1: 1993)

Section 13 Specifications

SPECIFICATIONS continued	
Visible Fault Locator	
Emitter Type	Laser
Wavelength	650nm ± 5nm
Laser Safety Class	Class II FDA21 CFR1040.10 & 1040.11 IEC 825-1: 1993)
Connector Type	2.5mm Universa
Output Power	1mW Max.
Unit Specifications	
Power Requirement	USB 5V, 2A
Battery	Li-pol
Battery Life	10hr.
Battery Charge Time	4hr typ.
Dimensions	5.25” H x 6.125” W x 2.5” D (133mm H x 156mm W x 64mm D)
Weight	1.5 lbs (0.7 kg)

Section 14 Warranty and Repair

14.1 Warranty Information

This product, including all mechanical, electrical, and optical parts and assemblies are unconditionally warranted to be free of defects in workmanship and material for a period of two (2) years from the date of delivery.

This warranty does not apply to expendable parts such as batteries or optical panel connectors, nor to any instrument or component which has been subjected to misuse, alteration, or fiber connector damage. It is the customer's responsibility to understand all the instructions and specifications prior to operating this instrument. This warranty does not extend to any loss or damage consequent to the failure of the warranted product.

14.2 Repair Information

If repair is required, simply call the factory for return instructions and a return authorization number (RMA).

Section 15 Trouble Shooting Guide

Symptom	Possible Cause	Solution
LCD dark	Power not on	Press ON/OFF key
	Batteries require recharging	Recharge batteries
LCD white	Power cycled too quickly	Turn off wait 10 seconds – turn on
Instrument locked Up	Unexpected Operational Mode	Turn off (hold ON/OFF button in for 1 second) wait 10 seconds – then depress On/Off to turn the unit on.
Low or no power being displayed	Defective cord or dirty connector	Replace or clean cord
	mismatch in connector Polish	Examine connector ends for damage. Use UPC Connectors ONLY!
USB hookup to PC not functioning properly	USB connection fault between unit and PC	Reset FIS Connect
	PC drivers not set properly	Un-install & re-install FIS Connect software and drivers

Section 16 Version Control

Through a program of continuous improvement, we upgrade the features and performance of the instrument in an on going process. The instrument firmware version is accessible at “turn-in the bottom right-hand corner of the display. The version changes and approximate release dates are as follows.

OV350-PM

V1.0.0.0 – Original Release

OV350-LS

V1.0.0.0 – Original Release

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