2.2.2 Compact Juno USB Interface

Convert your laptop or desktop PC into an Ophir sensor power/energy meter

- From sensor to interface to PC - powered from USB
- Plug and play with all standard Ophir smart sensors
- Position & size measurement with BeamTrack sensors
- Record every energy pulse at up to 10kHz
- Log power and energy, average, statistics, histograms and more with included StarLab application
- Pulsed Power measurements with Thermopile detectors
- Low Frequency Power - power measurement from pulse cycle energy (for VCSEL)
- LabVIEW VIs and COM Object interface
- Very compact - is just an extension of the smart plug

Smart Sensor to Juno to PC

Ophir’s basic smart compact Juno module turns your PC or laptop into a full fledged Ophir laser power/energy meter. Just install the software, plug the sensor into the Juno module and connect the Juno with a standard USB cable to the PC USB port. You can connect several Juno modules to the PC.

Specifications

<table>
<thead>
<tr>
<th>Power Measurement</th>
<th>5s to 500hr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Measurement</td>
<td>10,000Hz (a)</td>
</tr>
<tr>
<td>Max real time data logging to PC</td>
<td>N.A.</td>
</tr>
<tr>
<td>Trigger input and output</td>
<td>Supports time stamp for each pulse - resolution 10µs</td>
</tr>
<tr>
<td>General</td>
<td></td>
</tr>
<tr>
<td>Number of sensors supported</td>
<td>One sensor per unit. Can combine several units with software for display of up to 8 sensors on one PC</td>
</tr>
<tr>
<td>Compatible sensors</td>
<td>Supports all standard Ophir Pyroelectric, Thermal, BeamTrack and Photodiode sensors (b)</td>
</tr>
<tr>
<td>Power supply</td>
<td>Powered from USB</td>
</tr>
<tr>
<td>Dimensions</td>
<td>77mm L x 55mm W x 23mm H</td>
</tr>
<tr>
<td>Compliance</td>
<td>CE, China RoHS</td>
</tr>
</tbody>
</table>

Notes: (a) This is the data logging rate for every single point in turbo mode. Above that rate, the instrument will sample points but not log every single point.
(b) Not including PD300RM sensors.

Ordering Information

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Ophir P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Juno</td>
<td>Compact module to operate one Ophir sensor from your PC USB port. Comes with software</td>
<td>7Z01250</td>
</tr>
<tr>
<td>Juno USB cable</td>
<td>USB-A to MINI-B Cable (1 unit supplied with Juno)</td>
<td>7E01217</td>
</tr>
</tbody>
</table>
2.2 PC Interfaces

2.2.1 PC Connectivity Options for Power/Energy Measurement

Sample data with Ophir power meter at up to 4000 points per second

Ophir power meter capable of onboard storage of data of up to 250,000 points and data storage rate of up to 4000 points per second

Ophir sensor to USB interfaces with up to 4 channel connectivity

Ophir EA-1 interface with Ethernet connectivity

Ophir Quasar interface with wireless connectivity

Transmit real time data to PC at 500 points per second via Bluetooth

Transmit real time data to PC at up to 25,000 points/s per channel (sensor limited) via USB

Transmit real time data to PC at up to >25,000 points/s (sensor limited) via Ethernet

Transmit stored data or real time data to PC via USB or RS232

StarLab software (data transmitted via USB, Ethernet or Bluetooth)

StarCom software (data transmitted via RS232)

StarLab software

StarCom software
### 2.2.7 Summary of Computer Options for Ophir Meters and Interfaces

**Communications**

With Ophir RS232, USB, Bluetooth and GPIB communication options you can transfer data from the sensor to the PC in real time or offline. You can also control your Ophir power meter from the PC.

- **USB** on Nova II, Vega, StarBright, Centauri (optional on StarLite) power meters and Juno, Juno+, Pulsar and USBi PC interfaces
- **Bluetooth** wireless on Quasar interface
- **RS232** on LaserStar, Nova II, Vega, StarBright and Centauri optional on Nova
- **GPIB** optional on LaserStar
- **Ethernet** on EA-1 interface

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**Ophir Power Meter and Interface Specifications**

<table>
<thead>
<tr>
<th>Description</th>
<th>Centauri</th>
<th>StarBright</th>
<th>Nova II / Vega</th>
<th>StarLite</th>
<th>LaserStar</th>
<th>Nova</th>
<th>Juno / Juno+</th>
<th>Pulsar-1, 2 or 4</th>
<th>EA-1</th>
<th>Quasar Bluetooth</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power Supply</strong></td>
<td>Powered from internal rechargeable battery</td>
<td>Powered from internal rechargeable battery</td>
<td>Powered from internal rechargeable battery</td>
<td>Powered from internal rechargeable battery</td>
<td>Powered from internal rechargeable battery</td>
<td>Powered from USB</td>
<td>12V wall cube power supply</td>
<td>12V wall cube plugs into jack on rear</td>
<td>12V wall cube plugs into jack or PoE</td>
<td>Powered from internal rechargeable battery power supply</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>47 x 200 x 130mm</td>
<td>212 x 114 x 40mm</td>
<td>208 x 110 x 43mm / 210 x 109 x 36mm</td>
<td>211 x 114 x 40mm</td>
<td>194 x 228 x 57mm</td>
<td>205 x 95 x 39mm / 77 x 55 x 23mm / 105 x 80 x 29mm</td>
<td>103 x 190 x 33mm / 93 x 73 x 29mm</td>
<td>94 x 96 x 36mm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Notes:**

(a) The above refers to the rate for logging every single point in turbo mode. Above that rate, the instrument will sample points but not log every single point.

(b) For pyroelectric sensors, maximum guaranteed baud rate is 9600.

(c) StarLite must be USB enabled in order to work with StarLab. If your StarLite has not been USB enabled, please contact your Ophir distributor in order to obtain a USB Activation Code.

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2.3 Software Solutions

2.3.1 StarLab

StarLab turns your PC into a laser power/energy multi-channel station

Extensive Graphic Display of Data
- Line Plot, Histogram, Bar chart, Simulated Analog Needle
- Multiple data sets on one graph or separate graphs on the same screen

Advanced Measurement Processing
- Power/Energy Density, Scale Factor, Normalize against a reference
- Multi-channel comparisons
- User defined mathematical equations: channels A/B, (A-B)/C etc.
- Position & size measurement with BeamTrack sensors

Data Logging for Future Review
- Can be displayed graphically or saved in text format
- Easily exported to an Excel spreadsheet

Fully supports Centauri, StarBright, StarLite, Vega, Nova-II, Pulsar, Juno, Juno+, Quasar, EA-1 and USBI devices with all standard Ophir sensors

Flexible Display Options with StarLab

You may choose to display them separately

Maximize one of the sources

Choose line graph

or histogram

One of the above screens is maximized
Multiple Sensors displayed together

Click on one of the channels
The numerical values are from the channel chosen

Here multi line graph display has been chosen

Additional functions are available from the "Functions" tab

Here multi line histogram display has been chosen

Settings and functions may be opened to adjust then minimized as needed

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Functions and Logging

**Functions**

- Click on f(x) to open another trace combining measured values.

**Logging**

- Click on log button and logging of values starts.
- Files are stored here. They may be viewed graphically OR numerically.
- New trace is now added per defined function.
- Define function combining measured values.
BeamTrack Power/Position/Size Screens

Open Measuring type tab and choose Track:

Power:

Position:

Size:

Click on this tab and choose "stability":

Displays beam center wander weighted for dwell time at each position:

For latest updates please visit our website: www.ophiropt.com/photonics