



DISPLAYS



Ophir smart displays are true plug-and-play instruments. With all head information and calibration stored in the head plug, just plug in any one of over 150 Ophir smart heads and the instrument is calibrated and configured to measure laser power and energy with that head.

NOVA

- Leading and most popular Ophir display
- Compatible with all Ophir heads: thermal, pyroelectric and photodiode
- Single shot energy measurement with thermal heads
- Optional RS232 computer interface with Windows software
- Power and energy logging with graphical display and statistics
- Power averaging
- Easy to use soft keys, menu-driven
- Screen graphics
- Backlight and rechargeable battery
- Analog output
- EMI rejection



Compatible with the complete range of Ophir thermal (power and energy), pyroelectric and photodiode heads, Nova is truly versatile: measuring from pW to KW, μ J to 200J. With the optional scope adapter, you can connect your pyro head to an oscilloscope and see every pulse up to the maximum frequency permitted by the head.

Smart connector heads automatically configure and calibrate Nova when plugged in. Soft keys guide you through the screen graphics. Finished working? Your configuration can be saved for future use.

Nova's exclusive autoranging tune screen displays laser power graphically and displays maximum power. Zoom and time scale can be adjusted by user.

Selected Screens

Digital Power Screen

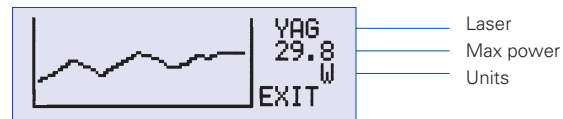
- CW industrial, medical and scientific lasers
- picoWatt to 20KW with appropriate heads

Laser Tuning Screen or Power Log Screen (not shown)

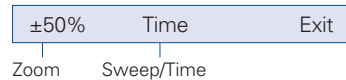
- Maximizing laser power
- User selected time period and zoom



Press Menu button or soft keys to make legends visible (not shown).

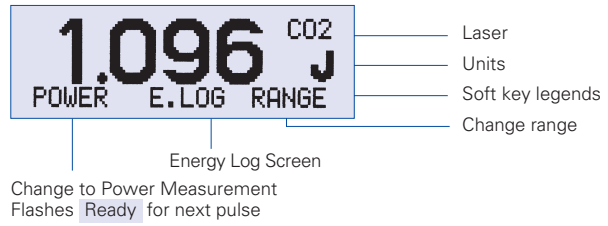


Press Menu button or soft keys to make legends visible.



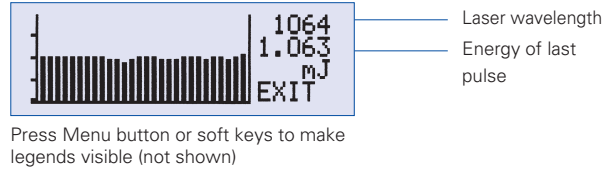
Energy Measurement Screen

- Pyroelectric and thermopile heads-single pulse
- Pyroelectric frequency measurement (not shown)



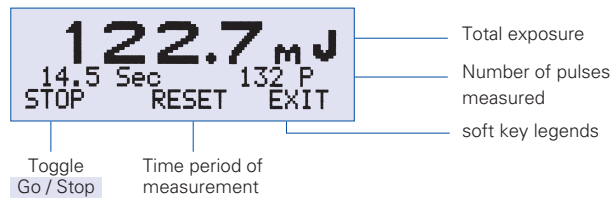
Energy Log Screen

- Pyroelectric heads
- Thermopile heads-successive single pulses
- Continuous scroll
- Energy statistics



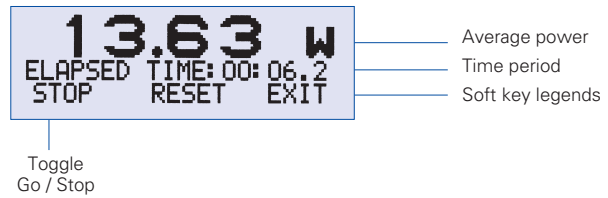
Pyroelectric Exposure Screen

- Sum or average energies over user selected time period / number of pulses
- Medicine, photolithography



Average Screen

- Thermopile, photodiode and pyroelectric heads
- Periodic (1/3 sec to 30 sec) or continuous (10 sec to 1 hour) average for fast-changing or slow-changing laser



Specifications

Display:	High legibility 32 x 122 pixel graphics supertwist LCD with switchable electroluminescent backlight. Large 12mm digits.
Features:	Many screen features: including power with bar graph, energy, average, exposure, frequency, graphs, and more. Analog output 1V f.s.
Refresh:	15 times / sec.
Case:	Molded high-impact plastic with kickstand and EMI conductive shielding, to allow use even in proximity to pulsed lasers.
Size:	Very compact: 203 x 95 x 38mm.
Battery:	Rechargeable 12 volts. 18 hours use between charges. Charger (included) also functions as AC adapter.
Head features:	Works with thermopile, pyroelectric, and photodiode heads. Automatic, continuous, background cancellation with PD300 heads. Submicrojoule and multikilohertz capability with model PE10 head. All heads use smart connector containing configuration information.
Program features:	Preferred startup configuration can be set by user. User can recalibrate power or energy. Response time. Zero offset.

Ordering Information		
Item	Description	Ophir P/N
Nova	Nova universal smart head display for thermal, pyroelectric and photodiode heads	7Z01500
Carrying Case	Carrying case 33x29x10 cm. For display and up to three heads	1J02079
Nova RS232 assemblies - allow Nova display to communicate with PC and be controlled by PC		
Nova RS232 Assembly	RS232 adapter with standard 2 meter cable (including software)	78105
Nova RS232 Assembly	RS232 adapter with 5 meter cable (including software)	781052
Nova RS232 Assembly	RS232 adapter with 8 meter cable (including software)	781051
Battery Pack	Replacement battery pack for Nova	7Z11200



Orion

Family of Handheld Laser Meters

For those who do not need the multifunction, the RS232 computer interface or the single shot energy capability of the Nova, Ophir now offers the Orion series - a lower cost alternative.

- Orion TH for measuring power with all Ophir thermal heads
- Orion PE for measuring energy with Ophir pyroelectric heads
- Orion PD for photodiode heads featuring full wavelength correction
- Soft keys, menu-driven graphic display with analog output and backlight



Laser Power & Energy

Heads

Displays

Beam Profile Wavelength

OEM Products

OrionTH

- Supports over 50 Ophir thermal heads- μ W to 20KW
- Fast response power measurement with auto or manual ranging
- Corrected for major laser wavelengths
- Laser tuning screen to maximize laser power
- Offset background at the push of a button

Orion PE

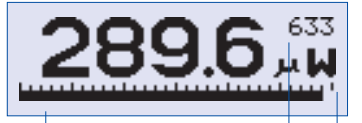
- Supports all Ophir pyroelectric heads and PD10 nanojoule meter
- Measures laser energy from nJ to 60J
- Frequencies up to 5KHz
- Energy logging statistics
- Built-in wavelength correction

Orion PD

- Supports all Ophir photodiode heads-200-1800 nm
- Wavelength corrected at 1nm increments with user selected favorite wavelength for ease of use
- pW to 3W with appropriate heads Patented dynamic background subtraction
- Display Watts or DBm
- Auto or manual range
- Laser tuning screen to maximize laser power

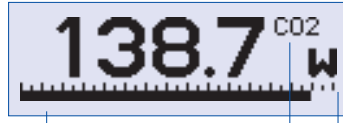
Selected Screens

Digital Bargraph Power Screen



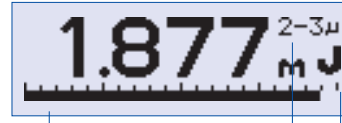
Bargraph Wavelength correction Units

Digital Bargraph Power Screen



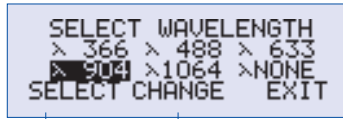
Bargraph Wavelength correction Units

Digital Bargraph Energy Screen



Bargraph Wavelength correction Units

Wavelength Selection Screen



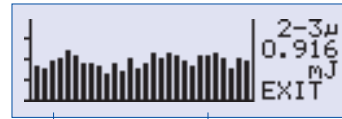
Select wavelength Change wavelength to different value

Laser Tuning Screen



Zoom Time scale

Energy Logging Screen



Pulse energies (scrolls when full)

Specifications

Display	High legibility 32 x 122 pixel graphics supertwist LCD with electroluminescent backlight.
Analog output	1 Volt full scale
Case	Molded high-impact plastic with kickstand and EMI conductive shielding to CE standards.
Size	Very compact: 203 x 95 x 38mm
Battery	Rechargeable with 18 hours operating time per charge. Charger (included) also functions as AC adapter.
Software features	Preferred startup configuration can be set by user and stored in head smart plug. Orion can be zeroed at the press of a button. Complete plug-and-play operation. All calibration and configuration information is read from the head smart plug.

Ordering Information		
Item	Description	Ophir P/N
Orion TH	Orion smart head display for thermal heads and BC20 heads	7Z01801
Orion PD	Orion smart head display for photodiode heads	7Z01803
Orion PE	Orion smart head display for pyroelectric heads	7Z01802
Carrying Case	Carrying case 33x29x10cm. For display and up to three heads.	1J02079
Battery Pack	Replacement battery pack for Orion	7Z11200

NOVA II

Versatile Laser Power/Energy Display

- Compatible with all Ophir thermal, pyroelectric and photodiode heads
- Large high definition LCD display
- Choice of digital or analog needle display
- 2 position kickstand
- Backlighting and rechargeable battery
- Analog output
- Log every point at up to 4000Hz with pyro heads
- Non volatile data storage up to 50,000 points
- Laser tuning screen and power and energy log
- USB and RS232 output to PC with statistics package
- NIST traceable and CE marked
- Soft keys and menu driven functions with on-line help
- Many software features such as density, min/max, scaling etc.



The Nova II is the most versatile and sophisticated handheld laser power/energy meter on the market. Just plug in one of the many Ophir smart heads and you have a whole measurement laboratory at your fingertips.

Besides measuring power or energy from pJ and pW to hundreds of Joules and thousands of Watts, the Nova II has many on-board features such as laser tuning, data logging, graphing, normalize, power or energy density units, attenuation scaling, max and min limits. For those who prefer an analog display, the Nova II can also display the power or energy with a high resolution simulated analog needle display.

The Nova II can be operated either by battery or from an AC source with the charger plugged in at all times. Its backlight allows illumination of the display in low light conditions.

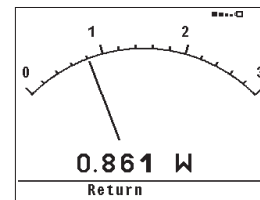
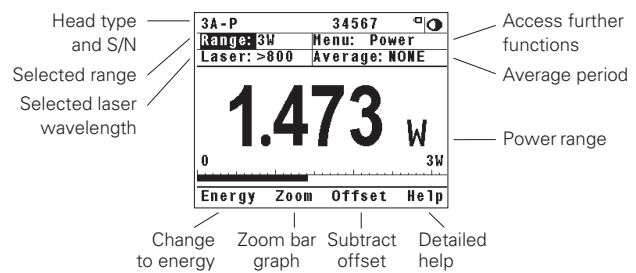
Selected Screens

Digital Power Screen

- CW industrial, medical and scientific lasers
- pW to 20KW with appropriate heads
- Can average over selected period. Useful for unstable lasers.
- Fast response bar graph

Analog Power Screen

- Perfect for adjusting and maximizing laser power
- Large analog needle with small digital display as well



Laser Power & Energy

Heads

Displays

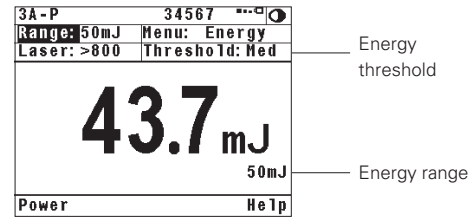
Beam Profile Wavelength

OEM Products

Selected Screens

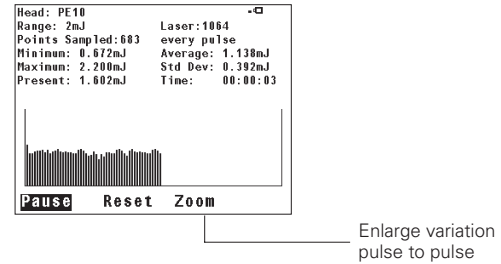
Energy Screen

- Pyroelectric heads (single or repetitive) and thermal heads (single shot only)
- Frequency measurement with pyroelectric heads



Energy Logging Screen

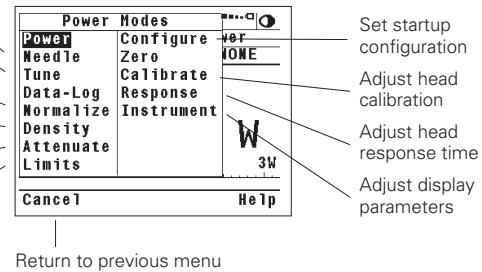
- Pyroelectric and thermal heads
- Continuous scroll with up to 100 points on screen
- Full statistics
- Store data onboard and recall



Additional Functions

- Press the menu choice on the main screen and many more options pop up as shown

- Choose analog needle screen
- Laser tune screen with continuous graph
- Normalize so present reading is 1.00
- Enter beam diameter and read in units of W/cm² or J/cm²
- Put in factor to read input power with attenuator or beam splitter
- Set for alarm if preset min or max limits exceeded



Specifications

Display:	High legibility 320 x 240 pixel graphics LCD with switchable electroluminescent backlight. Large 18mm digits. High resolution analog needle also can be chosen.
Features:	Many screen features including power with bar graph, energy, average, exposure, frequency, graphs, scaling, special units, and more. Complete on line context sensitive help screens.
Outputs	USB, RS232 and 1, 2, 5 and 10 volt full scale analog output.
Screen Refresh:	15 times/sec
Case:	Molded high impact plastic with two level kickstand.
Size:	Folds to a compact 208mm Lx 117mm Wx 40mm H
Battery:	Rechargeable NiMH batteries with typically 18 hours between charges. Charger (included) also functions as an AC adapter.
Data handling	Both USB communications with data transmission rate of >4000 points/s and RS232 with 19200 baud rate. Non volatile on board storage of up to 54000 data points in up to 10 files. Data can be viewed on board or transmitted to PC.
Head features:	Works with thermopile, pyroelectric and photodiode heads. Automatic continuous background cancellation with PD300 heads. Submicrojoule and multikilohertz capability with pyroelectric heads.
Program features:	Preferred startup configuration can be set by user. User can recalibrate power, energy, response time and zero offset.

Ordering Information		
Item	Description	Ophir P/N
Nova II	Nova II universal smart head display for thermal, pyroelectric and photodiode heads	7Z01550
Carrying Case	Carrying case 46x35x13 cm. For display and up to three heads	1J02079
Nova II USB Cable	USB to mini DIN cable	7E01205
Nova II RS232 Cable	D9 to mini DIN cable	7E01206
Battery Pack	Replacement battery pack for the Nova II	7E05055

VEGA

Color Screen Laser Power/Energy Display

- Compatible with all Ophir thermal, pyroelectric and photodiode heads
- Brilliant color large size TFT 320x240 display
- Compact handheld design with rubberized bumpers and optimized kickstand
- Choice of digital or analog needle display
- Illuminated keys for working in the dark
- Analog output
- Log every point at up to 4000Hz with pyro heads
- Non volatile data storage up to 200,000 points
- Laser tuning screen and power and energy log
- USB and RS232 output to PC with Statistics package
- NIST traceable and CE marked
- Soft keys and menu driven functions with on line help
- Many software features such as density, min/max, scaling etc.



The Vega is the most versatile and sophisticated handheld laser power/energy meter on the market. Just plug in one of the many Ophir smart heads and you have a whole measurement laboratory at your fingertips. The bright color display gives unparalleled legibility and ease of interpreting information.

Besides measuring power or energy from pJ and pW to hundreds of Joules and thousands of watts, the Vega has many on board features such as laser tuning, data logging, graphing, normalize, power or energy density units, attenuation scaling, max and min limits.

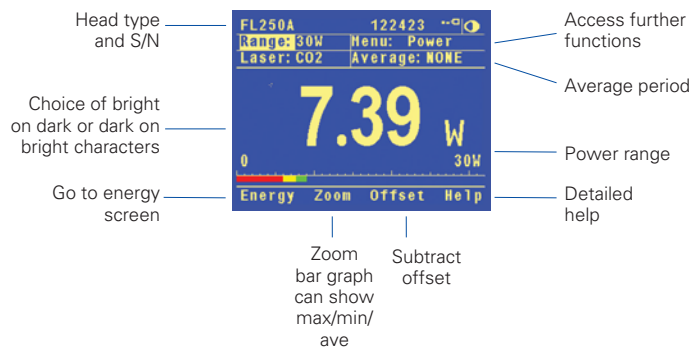
For those who prefer an analog display, the Vega can also display the power or energy with a high resolution simulated analog needle display.

The Vega can be operated either by battery or from an AC source with the charger plugged in at all times. Its bright display and backlit keys allow easy use in dark room conditions or with laser glasses on.

Selected Screens

Digital Power Screen and Color Functions

- Choice of bright on dark or Dark on bright characters
- Optimize colors for use with Laser eye protection glasses
- Can average over selected period. Useful for unstable lasers
- Bar graph can show max / min / average in different colors



Laser Power & Energy

Heads

Displays

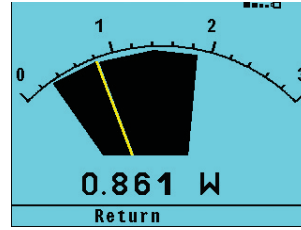
Beam Profile Wavelength

OEM Products



Analog Power Screen

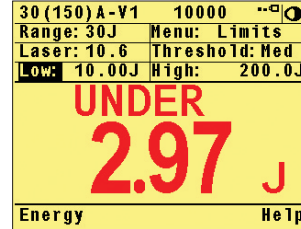
- Perfect for adjusting and maximizing laser power
- Persistent graphical display allows tracking of minimum maximum values measured
- Large analog needle with small digital display as well



Choice of smaller display with range, menu, laser and average headers.

Energy/Limits Screen

- Pyroelectric heads (single or repetitive) and thermal heads (single shot only).
- Frequency measurement with pyroelectric heads.
- Limits screen with bright colored warning

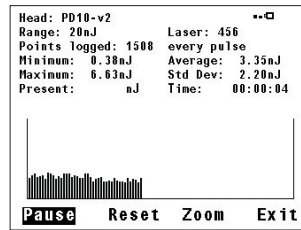


Energy threshold

Energy range

Energy logging screen

- Pyroelectric and thermal heads
- Continuous scroll with up to 100 points on screen
- Full statistics
- Store data onboard and recall



Enlarge variation pulse to pulse

Additional functions

- Press the menu choice on the main screen and many more options pop up as shown

Choose analog needle screen

Laser tune screen with continuous graph

Normalize so present reading is 1.00

Enter beam diameter and read in units of W/cm² or J/cm²

Put in factor to read input power with attenuator or beam splitter

Set for alarm if preset min or max limits exceeded

Power Modes

Power Configure

Needle Zero

Tune Calibrate

Data-Log Response

Normalize Instrument

Density W

Attenuate 3W

Limits

Cancel Help

Return to previous menu

Set startup configuration

Adjust head calibration

Adjust head response time

Adjust display parameters

Specifications

Display:	Brilliant color TFT 320 x 240 pixel graphics LCD. Large 16mm digits. High resolution analog needle also can be chosen.
Features:	Many screen features including power with multicolor bar graph, energy, average, exposure, frequency, graphs, scaling, special units, and more. Complete on line context sensitive help screens.
Outputs:	USB, RS232 and user selectable 1, 2, 5 and 10 Volt full scale analog output.
Screen refresh:	15 times/sec
Case:	Molded high impact plastic with optimized angle kickstand. Rubberized sides for easy grip and protection against damage.
Size:	Folds to a compact 208mm L x 117mm W x 40mm H
Battery:	Rechargeable NiMH batteries with typically 18 hours between charges. Charger (included) also functions as an AC adapter.
Data handling:	Both built in USB communications with data transmission rate of >4000 points/s and RS232 available with 19200 baud rate. Non volatile on board storage of up to 200,000 data points ¹ in up to 10 files. Data can be viewed on board or transmitted to PC.
Head features:	Works with thermopile, pyroelectric and photodiode heads. Automatic continuous background cancellation with PD300 heads. Submicrojoule and multikilohertz capability with pyroelectric heads.
Program features:	Preferred start up configuration can be set by user. User can recalibrate power, energy, response time and zero offset.

Note 1: ¹ software release storage of 50,000 points. Early 2009 software upgrade to 200,000 points

Ordering information		
Item	Description	Ophir P/N
Vega	Vega color universal smart head display for thermal, pyroelectric and photodiode heads	7Z01560
Carrying case	Carrying case 46x35x13 cm. For display and up to 3 heads.	1J02079
USB cable for Vega	USB to mini DIN cable	7E01205
RS232 cable for Vega	D9 to mini DIN cable	7E01206
Battery pack for Vega	Replacement battery pack for the Vega	7E05055

Laserstar

Versatile Laser Power/Energy Meter

- Two models available: dual and single channel
- Single channel model can be upgraded to dual channel
- Compatible with all Ophir thermopile, pyroelectric, photodiode and RP heads
- Large LCD display
- Backlighting and rechargeable battery
- Screen graphics and statistics (std dev, min, max)
- Analog output
- Built-in RS232 interface
- Log every data point at >1500Hz with pyroelectric heads
- Non-volatile data storage up to 50,000 points
- Laser tuning screen and power log
- Audio sound for laser tuning and low battery
- Statistics package
- GPIB option (IEEE488.1)
- NIST traceable
- CE marked
- Soft keys, menu-driven

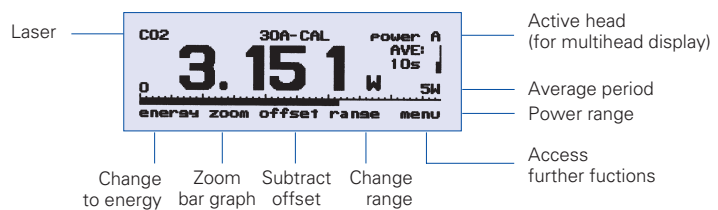


The dual channel model enables user to simply plug in any of Ophir's thermal, pyroelectric, photodiode or RP heads and measure two channels independently, or the ratio or difference between them in real time.

Up to 10 data files (54,000 points total) can be stored for onboard review or downloading to computer even if Laserstar has been switched off. The built-in RS232 interface and StarCom PC software allow on-line processing of data or processing previously stored data; results are displayed graphically on a PC.

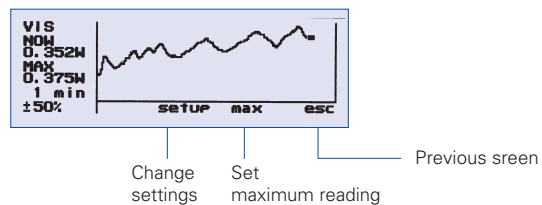
Digital Power Screen

- CW industrial, medical and scientific lasers
- pW to 20KW with appropriate heads
- Can average over selected period
Useful for unstable lasers
- Fast response bar graph



Laser Tuning Screen or Power Log Screen (not shown)

- Maximizing laser power
- User selected time period and zoom
- Option of audio tune tone



Laser Power & Energy

Heads

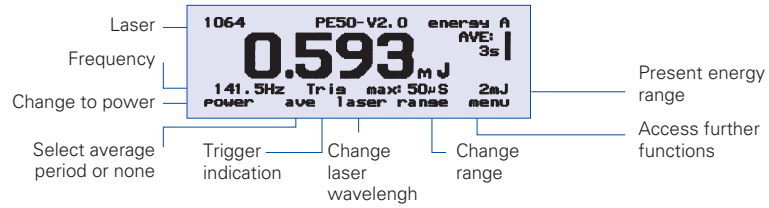
Displays

Beam Profile Wavelength

OEM Products

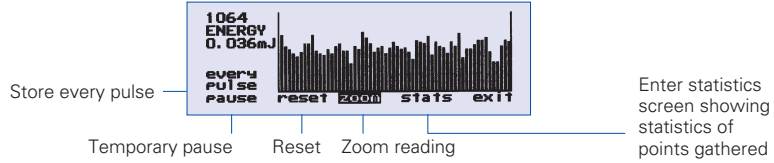
Energy Measurement Screen

- Pyroelectric and thermal heads – single pulse
- Pyroelectric frequency measurement



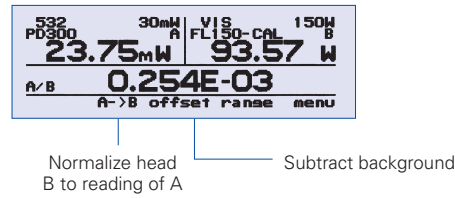
Energy Log Screen

- Pyroelectric heads
- Thermal heads – successive single pulses
- Continuous scroll
- Energy statistics



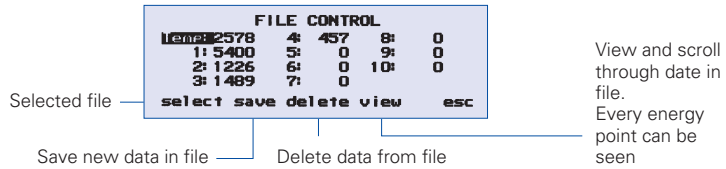
Ratio Screen

- Two independent heads
- Measure ratio, sum, difference
- Normalize one head to the other



Data Storage and Transmission

- Non-volatile storage of power and energy logging data
- Store in up to 10 files and transmit to
- PC using StarCom Windows program provided



Specifications

Display	High legibility 64 x 240 pixel graphics supertwist LCD with switchable, electroluminescent backlight which operates from charger or battery. Large 17mm digits. Screen refresh 15Hz.
Features	Many screen features including: power with bargraph, energy, average, exposure, frequency, graphs and more. Analog output 1 volt F.S.
Case	Molded high-impact plastic with swivel display and EMI conductive shielding, to allow use even in proximity to pulsed lasers.
Size	Folds to a compact 228mm W x 195mm L x 54mm H.
Battery	Rechargeable 18 hours between charges. Charger (included) also functions as AC adapter.
Multihead option	Two heads can be connected and measure independently, or the ration, sum or difference of the two can be displayed.
Data handling	Built-in RS232 communications at up to 19200 baud. Non-volatile on-board data storage in 10 files of up to 54000 points total. Data can be viewed on-board or transmitted to PC.
Head features	Works with thermal, pyroelectric and photodiode heads. Automatic, continuous, background cancellation with PD300 heads. Submicrojoule and multikilohertz capability with pyroelectric heads.
Program features	User can update calibration information. Preferred startup configuration can be set by user. User can recalibrate power, energy, response time and zero offset.

Ordering Information		
Item	Description	Ophir P/N
Laserstar	Laserstar single channel universal smart head display for thermal, pyroelectric, photodiode and RP heads	7Z01600
Laserstar 2 Channel	Laserstar with dual channel capability including ration and difference measurement	7Z01601
Laserstar Hard Case	Hard case 46x35x13cm. For display and up to three heads	1Z09101
Laserstar AN adapter	Laserstar analog output adapter. Plugs into D25 output and provides analog output from BNC plug (1 unit supplied with Laserstar)	7Z11004
Laserstar Battery Pack	Replacement battery pack for Laserstar	7E14006
Laserstar IEEE Option	IEEE GPIB adapter for Laserstar	78300

Ophir's PC Connectivity Options for Power/Energy Measurement



Ophir Pyroelectric, Thermal and Photodiode heads measure at up to 20,000 points per second

Sample data with Ophir display at up to 4000 points per second

Ophir displays capable of on board storage of data of up to 250,000 points and data storage rate of up to 4000 points per second



Laser Power & Energy



Ophir smart head to USB interfaces and Pulsar with up to 4 channel connectivity

Transmit real time data to PC at up to 30,000 points/s per channel (head limited) via USB

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

Heads



Ophir Quasar interfaces with wireless connectivity

Transmit real time data to PC at ~300 points per second via Bluetooth

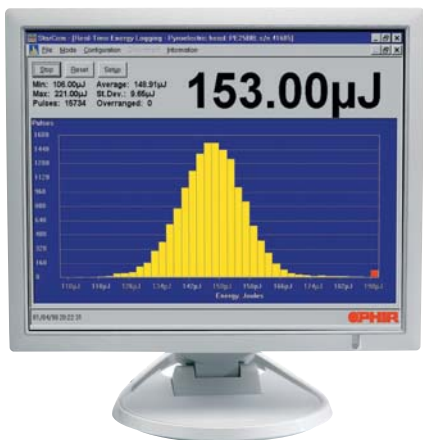
Transmit power and single shot energy data directly to PC via wireless Bluetooth

Many thermal heads can be ordered with integral Quasar wireless interface installed for transfer of power and single shot energy measurements

Displays

USBI software (data transmitted via USB or Bluetooth)

StarCom software (data transmitted via RS232)



Beam Profile Wavelength

OEM Products



Computer Options for Ophir Displays and Interfaces

Communications

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

- USB standard on Nova II, Vega and USB Interfaces
- Bluetooth wireless on the Quasar interface
- RS232 standard with the Laserstar and Nova II, Optional on the Nova and Orion
- GPIB optional with the Laserstar

USBI Software

The USBI Software is a software package for Ophir instruments using USB communications or Bluetooth communications. Further details on the USBI software on page 90

Ophir LabVIEW Vis

With Ophir LabVIEW Vis you can build a variety of LabVIEW applications for Ophir Displays and USB Interfaces using RS232, USB, Bluetooth or GPIB. These VIs can be downloaded from Ophir's website www.ophiropt.com

Data Transfer Specifications Comparison Table					
Display or Interface	Nova / Orion RS232	Nova II / Vega RS232 Laserstar RS232/GPIB	Nova II / Vega USB	USB Interface Pulsar-1, 2 or 4	Quasar Bluetooth
Power measurement					
Power log period	5s to 25hr.	12s to 600hr.	12s to 600hr.	5s to 500hr.	5s to 500hr
Max points stored onboard	300	6000	6000	N.A.	N.A.
Max points direct to PC	unlimited	unlimited	unlimited	unlimited	unlimited
Energy measurement					
Max real time data logging to PC	>10Hz	>30Hz RS232 >1500Hz GPIB	Nova II or Vega >2000Hz ¹	USBI Interface 2000Hz ¹ Pulsar-1-4 20,000Hz ¹	~300Hz N.A.
Max onboard data logging rate	>10Hz	Nova II or Vega 4000Hz ¹ Laserstar >1500Hz ¹	Nova II or Vega 4000Hz ¹ Laserstar >1500Hz ¹	N.A. N.A.	
Data transfer from instrument to PC	seconds	~500 points/s	~500 points/s	N.A.	N.A.
Max points stored onboard	1000	Nova II 50,000 Vega 200,000 ²	Nova II 50,000 Vega 200,000 ²	N.A.	N.A.
General					
ActiveX software	yes	no	yes	yes	yes ²
LabVIEW VIs	yes	yes	yes	USB Interface yes, Pulsar-1-4 mid 2008	yes ²
Maximum baud rate	19200 ³	38400	N.A.	N.A.	N.A.
PC file format	Pure text files, spreadsheet compatible				

¹ 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. For PD10 and PD10-pj heads, the highest rate even in turbo mode is 1600Hz.

² Available early 2009. Until this software upgrade, Vega will have 50,000 points on board storage.

³ For pyroelectric heads, maximum guaranteed baud rate is 9600.

RS232 Module for Nova

Plug in Module allows transfer of power and energy data to PC and remote control of display from PC. Includes manual and StarCom application program (refer to page 91)



IEEE488 for Laserstar

Option available with Laserstar display allowing Laserstar to operate with GPIB protocol. The option comes with StarCom software and also LabVIEW Vis to build LabVIEW applications.



Carrying Cases

Carrying case for Nova, Nova II, Vega or Orion display and up to 3 heads (see page 76, 78, 80, 82)
Carrying case for Laserstar display and up to 3 heads (see page 84)



Hard Case



Carrying Case



Quasar Wireless Bluetooth Interface

Straight from your Measuring Head to your Laptop or PC with no cables

- Option One: Quasar table model connects to any Ophir smart head and broadcasts to your PC
- Option Two: most thermal heads can be purchased with Quasar installed on head – no wires at all
- Wireless range of >10 meters. Extended range available.
- Operates from rechargeable battery with typically >50 hours lifetime
- Powerful PC software included converts your PC into a complete laser power/energy meter
- Log Power and energy, average, statistics, histograms and more
- Active X software provided (late 2008)

Quasar Bluetooth Wireless Smart Head to PC Interface – 2 Versions



Quasar stand alone module connects to any Ophir smart head, thermal, pyroelectric or photodiode

Quasar built-in module, mounts directly to most thermal heads

Any PC or laptop connects to Quasar module via the provided Bluetooth adapter and operates as a power/energy meter/ data logger

The Ophir Quasar module provides two ways to use your Ophir smart head as a remote laser power/energy meter allowing optimum placement of the head and separate optimum placement of your PC or laptop with no connecting cables. The system is provided complete with a USB port Bluetooth adapter for your PC/laptop and the Ophir USBI software.

The stand alone Quasar module can connect to any Ophir smart head, thermal, photodiode or pyroelectric.

For most thermal heads, there is also an option to purchase the head with the Quasar module mounted to the head for maximum portability with no wires at all.



Quasar Bluetooth Smart Head to PC Interface

Specifications

Item	Specification
Head compatibility	All Ophir standard smart heads, thermal, photodiode and pyroelectric
Availability as built into head module	Thermal head series 30A, L30A, 30(150)A, L50A, L1500W, 5000W – mounts to back Fan cooled head series FL150A, FL250A, FL300A – mounts to top
Operating range	>10 meters standard laboratory conditions when used with built in laptop Bluetooth or Ophir recommended adapter. Larger antenna for extended range available
Power	Powered by rechargeable NiMH battery. Battery life >20 hours, 10 hours for pyro heads. Automatically goes into sleep mode when not connected to PC. Low batt indication. Charges from 12VDC either polarity.
LED indicator	LED indicator indicates whether connected, in standby or off
Bluetooth standard	Bluetooth class 1. Connection to PC is transparent to user. Will work with built in laptop Bluetooth and most add on USB to Bluetooth adapters. Ophir recommended USB to Bluetooth adapter available.
Data transfer rate for pyro heads	~300Hz
Dimensions	96mm W x 95mm D x 36mm H not including antenna
Connections	15 pin D type head connector (stand alone module only), standard Ophir 12V charger input.

Smart Head to USB interfaces

Convert your Laptop or Desktop PC Into an Ophir Smart Head Power/Energy Meter

- From head to interface to PC – no power source needed with single channel model
- Single head basic model and 4 / 2 and 1 head high speed external trigger models
- Plug and play with most Ophir smart heads
- Record every energy pulse at up to 20 KHz with Pulsar-4 / Pulsar-2 or Pulsar-1
- Log Power and energy, average, statistics, histograms and more
- Active X software provided

Smart head to USB Interface and four channel Pulsar 1-4

Ophir basic smart head to USB interface for single channel and high speed Pulsar series for 1-4 channels turn your PC or laptop into a full fledged Ophir multi-channel laser power/energy meter. Just install the software, plug the head into the interface box and the USB cable from the box to the PC USB port. Using the USB Interface, you can connect several heads to the PC by using one box for each head and if necessary, a USB hub. With the Pulsar-4 ,Pulsar-2 and Pulsar-1 series, you can connect up to 4 heads to each box, monitor each pulse at up to 20KHz and utilize external trigger. The connection from each box to the PC is via one USB cable.



Single channel USB Interface



Fast 4 channel Pulsar-4 with external trigger

Specifications

Model	USB Interface	Pulsar-4 / Pulsar-2 / Pulsar-1
Power Measurement		
Power log period	5s to 500hr.	5s to 500hr.
Analog output	Analog output 1V F.S.	N.A.
Energy Measurement		
Max real time data logging to PC	2000Hz ¹	30,000Hz ²
Trigger input and output	N.A.	BNC trigger input to enable measurement of missing pulses or to select specific pulses. Can also be configured to give trigger output.
Timing	Supports time stamp for each pulse – resolution 50ms	Supports time stamp for each pulse resolution 1µs
General		
Number of heads supported	One head per unit. Can combine several units with software for display of up to 8 heads on one PC	4 / 2 / 1 heads per unit. Can combine several units with software for display of up to 8 heads on one PC
Compatible heads	Supports most Ophir pyroelectric, thermal and photodiode heads	
Power supply	Powered from USB BUS	12V wall cube power supply plugs into jack on rear
Dimensions	155 x 90 x 34mm	189 x 103 x 33mm

(1) 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.
 (2) This is the maximum data transfer rate limited by the USB1. At present, the maximum data transfer rate of the fastest Ophir heads is 20KHz.



Laser Power & Energy

Heads

Displays

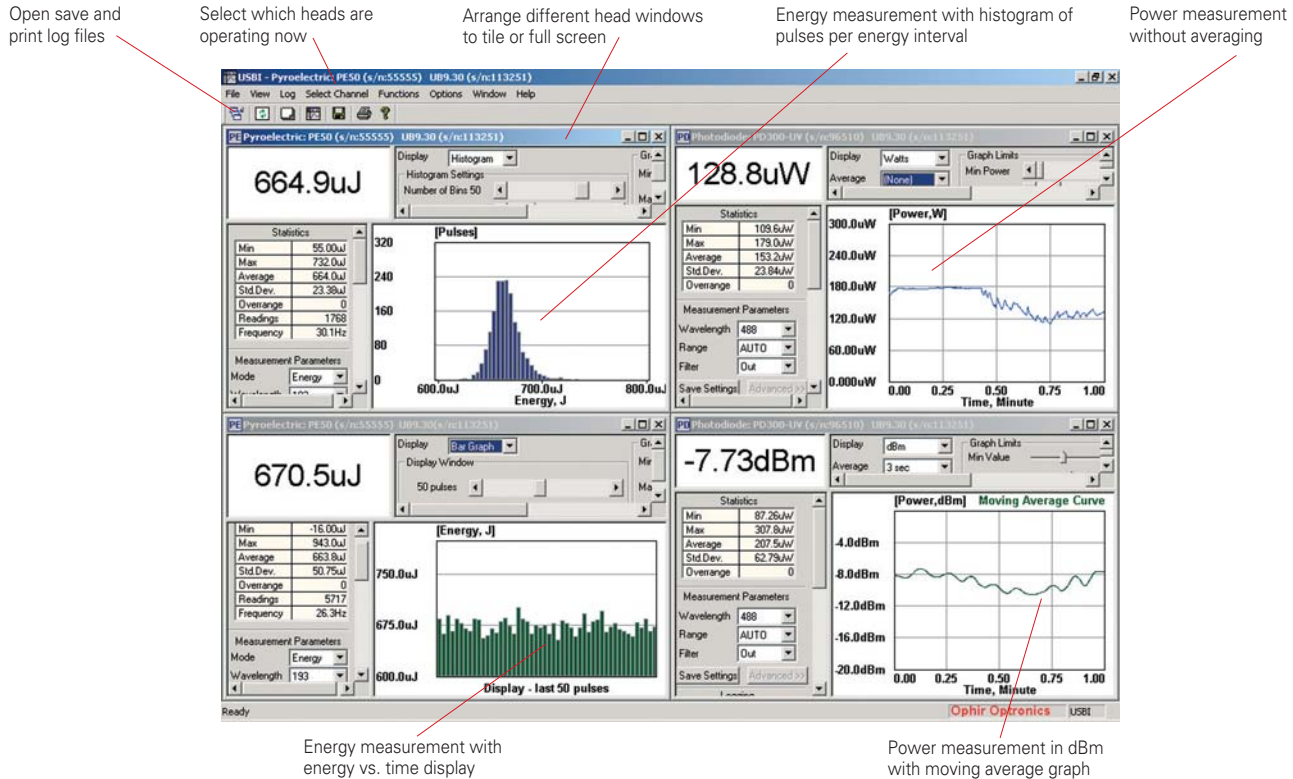
Beam Profile Wavelength

OEM Products

USB PC Software

This software is supplied with the USB Interfaces and Quasar and allows you to measure, analyze and record power and energy from any Ophir smart head.

You can log the data from each head simultaneously to file. With the USBI, you can tile up to 8 heads at once on the PC screen or view them individually. Active X software is also provided so that you can control the devices from your own software.



Software Specifications

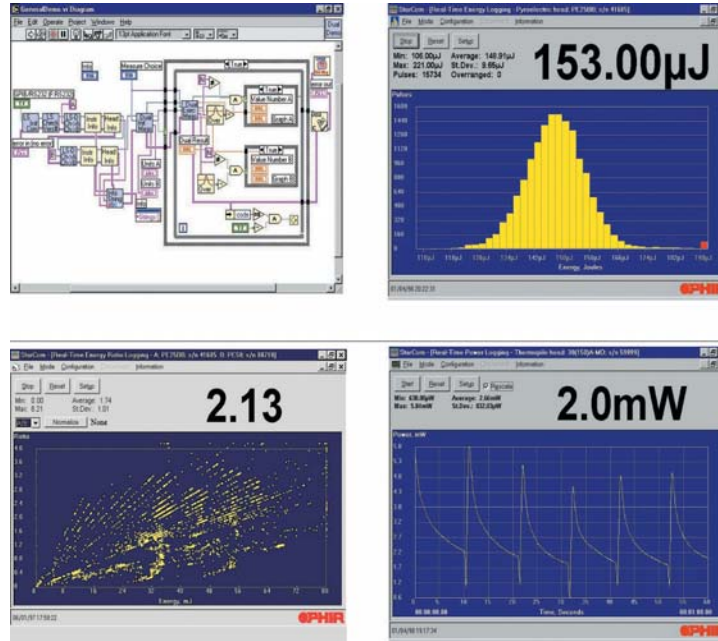
Model	USB Interface	Pulsar-4 / Pulsar-2 / Pulsar-1	Quasar Wireless Interface
Power Measurement			
Power log period	5s to 500hr.	5s to 500hr.	5s to 500hr.
Analog output	Analog output 1V F.S.	N.A.	N.A.
Energy Measurement			
Max real time data logging to PC	2000Hz ¹	20,000Hz ¹	~300Hz ¹
Trigger input	N.A.	BNC trigger input to enable measurement of missing pulses or to select specific pulses	N.A.
Timing	Supports time stamp for each pulse – resolution 50ms	Supports time stamp for each pulse resolution 1µs	Supports time stamp for each pulse – resolution 10ms
General			
Number of heads supported	One head per unit. Can combine several units with software for display of up to 8 heads on one PC	4 / 2 / 1 heads per unit. Can combine several units with software for display of up to 8 heads on one PC	One head per unit. At present can display only one head on PC. Next software release will allow display of up to 4 heads on one PC
Compatible heads	Supports most Ophir pyroelectric, thermal and photodiode heads	Supports most Ophir pyroelectric, thermal and photodiode heads	Supports most Ophir pyroelectric, thermal and photodiode heads
Power supply	Powered from USB BUS	12V wall cube power supply plugs into jack on rear	Powered from internal rechargeable batter power supply
Dimensions	155 x 90 x 34mm	189 x 103 x 33mm	96mm W x 95mm D x 36mm H not including antenna

Note 1: The above refers to the rate for logging every single point in turbo mode for heads supporting that pulse rate. Above that rate, the instrument will sample points but not log every single point.

StarCom PC Software

This software is supplied with the Nova II and Vega and Nova or Orion with RS232 option. It allows you to measure, analyze and record power and energy from any Ophir smart head.

You can log the data from each head simultaneously to file. Active X software is also provided so that you can control the application from your own software.



Laser Power & Energy

Heads

Displays

Beam Profile Wavelength

OEM Products

Ordering Information		
Item	Description	Ophir P/N
USB Interface	Module to operate one Ophir smart head from your PC USB port. Comes with software. Max repetition rate for every pulse ~2KHz. Powered from PC USB port.	7Z01200
Pulsar-4	Module to operate up to 4 Ophir smart heads from your PC USB port. Comes with software. Max repetition rate for every pulse 20KHz. Has external trigger capability. Powered from supplied wall cube power supply	7Z01201
Pulsar-2	Same as above but for 2 channels only	7Z01202
Pulsar-1	Same as above but for 1 channel only	7Z01203
Quasar Bluetooth Interface	Module to operate one Ophir smart head from your PC via Bluetooth wireless interface. Comes with software. Max repetition rate for every pulse ~300Hz. Powered from built in rechargeable battery. Comes with power supply and USB to Bluetooth PC adapter.	7Z01300
USB to Bluetooth adapter	Adapter for PC or Laptop not equipped with built in Bluetooth. This adapter is tested and recommended by Ophir. Quasar is not guaranteed to work with all other adapters on the market. One is included with each purchase of Quasar	7E10039
Quasar built into thermal heads	Same as above but permanently attached to compatible thermal heads. See below for ordering information	See below
Quasar ER option	Extended range option available for all Quasars with estimated range of >50 meters. This option must be ordered in addition to Quasar order	7Z01301
Nova RS232 Assembly	RS232 adapter with standard 2 meter cable (including software)	78105
Nova RS232, 5 m cable	As above but with 5 meter cable	781052
Nova RS232, 8 m cable	As above but with 8 meter cable	781051
Nova II / Vega USB cable	USB to mini DIN cable for USB link with Nova II or Vega	7E01205
Nova II / Vega RS232 cable	D9 to mini DIN cable for RS232 link with Nova II or Vega	7E01206
Laserstar IEEE cable	IEEE GPIB adapter cable for Laserstar	78300

Thermal heads available with integral Quasar					
Head	P/N	Head	P/N	Head	P/N
30A-V1-Q	7Z02604Q	30A-P-V1-Q	7Z02613Q	30A-P-DIF-Q	7Z02616Q
30A-N-Q	7Z02003Q	L30A-V1-Q	7Z02603Q	L50A-Q	7Z02606Q
30(150)A-Q	7Z02608Q	30(150)A-HE-Q	7Z02380Q	30(150)A-SV-Q	1Z02625Q
F150A-V1-Q	7Z02656Q	FL250A-V1-Q	7Z02605Q	FL250A-LP1-V1-Q	7Z02653SQ
FL300A-Q	7Z02627Q	1000W-V2-Q	7Z02664Q	L1500W-V1-Q	7Z02661Q
L1500W-LP-V1-Q	7Z02665Q	5000W-Q	7Z02119Q	5000W-LP-Q	7Z02255Q

