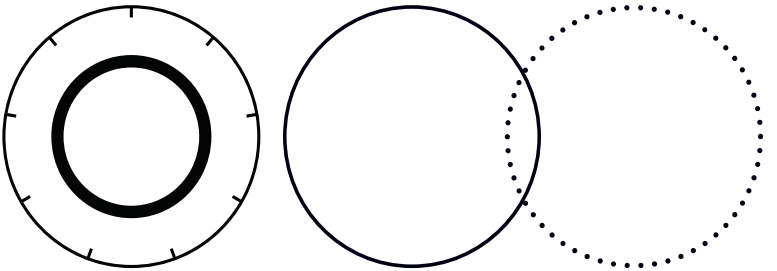
BeamView.NET
for LaserCam-HR Camera Systems

Quick Start Guide



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1.0 Before Work is Started

Coherent product information is now available in one easily accessible location on the Coherent website. Filter the search by product type, document category, or both.

1.1 Downloads

Go to the Resources section on the Coherent website:

https://www.coherent.com/resources

- Software
- Drawing Files
- Quick Start Guides
- User Manuals
- Datasheets
- Application Notes

1.2 Products Supported

BeamView.NET supports the following cameras:

- LaserCam-HR, LaserCam-HR-II-1/2-in., LaserCam-HR-II-2/3-in.
- LaserCam-HR-II-2/3-in. 14-bit
- LaserCam-HR-UV, LaserCam-HR-II-2/3-in.-UV 14-bit
- LaserCam-HR InGaAs

For information about sensor products, go to:

https://www.coherent.com/laser-power-energy-measurement

2.0 Safety Information

This section provides an introduction to safety information, including signal words and symbols that to know before measurements are taken.

2.1 Signal Words and Symbols

This documentation may contain sections in which particular hazards are defined or special attention is drawn to particular conditions. These sections are indicated with signal words in accordance with ANSI Z-535.6 and safety symbols (pictorial hazard alerts) in accordance with ANSI Z-535.3 and ISO 7010.

2.1.1 Signal Words

The following signal words are used in this documentation:

Signal Word	Description
WARNING	Indicates a hazardous situation that, if not avoided, could result in death or serious injury.
CAUTION	Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates information considered important, but not hazard-related. 'NOTICE' may also be used when there is the risk of property damage.

2.1.2 Symbols

The following signal words are always emphasized with a safety symbol that indicates a special hazard, regardless of the hazard level. The icons are intended to alert the operator as described here:

Icon	Tells the operator About …
	Important information or instructions for operation and maintenance.

Icon	Tells the operator About …
	Danger of exposure to hazardous visible and invisible laser radiation.
	Susceptible to Electro-Static Discharge (ESD).

2.2 Laser Safety

Laser light that is emitted can be in the infrared or ultraviolet area of the electromagnetic spectrum and may not be visible to the human eye. Safety precautions listed here are to be read and followed by anyone working with or near a laser.

At all times when the Laser Cam devices are used with a laser, ensure that all personnel are protected from accidental or unnecessary exposure to laser radiation.

WARNING!
Direct eye contact with the output beam from a laser causes serious eye injury and possible blindness. Always avoid exposure to eye or skin from both DIRECT and SCATTERED radiation.

2.2.1 General Laser Safety Precautions

Because of its optical qualities, laser light poses safety hazards not associated with light from conventional light sources.

Avoid direct exposure to the laser light, and follow these control measures:

- Always wear appropriate laser safety eye wear for protection against the specific wavelengths and laser energy being generated.

- Never look directly into the laser light source or at scattered laser light from any reflective surface, even when wearing laser safety eye wear.
- Laser beams can easily cause flesh burns or ignite clothing.
- Avoid wearing watches, jewelry, or other objects that may reflect or scatter the laser beam.
- Terminate the laser beam with a light-absorbing material, and use energy-absorbing targets for beam blocking.

2.2.2 Safety Precautions for Cameras

Coherent LaserCam products use a Low Distortion Face Plate (LDFP) installed in the camera aperture. The LDFP filter glass eliminates unwanted background light, provides attenuation for the laser beam, and provides protection for the camera sensor.

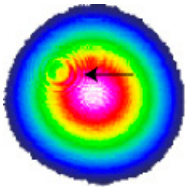
It is important to note that Coherent recommends to **not** remove this under most circumstances, as this is the only protection the camera sensor has against debris and mechanical damage. The LaserCam warranty is void if the LDFP is removed.

CAUTION!
If the Low-Distortion Face Plate (LDFP) is removed, the Warranty is void.

Any modification to remove the LDFP leaves the sensor susceptible to damage. If the LDFP is removed from the camera, special precautions (described next) must be taken to avoid sensor damage.

Dust

If low-intensity spots or small circles are noticed in the camera video, as shown in this example, then dust may be present.



Dust can cause distortion in the form of small circles if present on the LDFP filter glass, or can cause low-intensity spots if present on the sensor array.

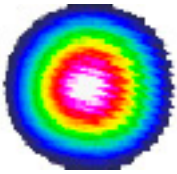
Observe the defects with a flashlight illuminating the camera. If the defect moves when the flashlight angle is changed, then the dust is on the LDFP; otherwise, it is caused by dust on the array.

To correct this situation, use clean air at low-pressure (or methanol and lens tissue) to clean the LDFP filter glass. Use only low-pressure micro-filtered clean air to blow dust off the sensor.

Take all necessary precautions to insure that nothing makes any contact with the sensor surface.

Fringes

If the LDFP filter glass is installed in the camera, then fringes may appear in the video as shown here:



The fringe pattern is due to a second reflection off the sensor and the LDFP superimposing back onto the original beam image.

To correct this situation, rotate the LDFP housing until the fringes are no longer present. Slightly turning the camera with respect to the laser beam can also reduce this effect.

CAUTION!
Use small, careful movements when rotating any devices to avoid laser back reflection!

Laser Power Input

Depending on the LaserCam HR camera model, saturation occurs at various power levels and wavelengths. See the *Operator Manual* for the specific camera to read information about saturation levels and damage thresholds at various wavelengths.

2.3 China RoHS Label

The China RoHS label is as follows for the LaserCam cameras:

部件名称 Part Name	有害物质 Hazardous Substances						
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)	
电缆装配 Cable Assembly	X	O	O	O	O	O	
本表格依据SJ/T 11364的规定编制							
O: 表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572规定的限量要求以下。 X: 表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572规定的限量要求。							

This *Quick Start Guide* provides an introduction to the BeamView.NET beam-analysis software and includes the following sections:

- Features of the software
- Products supported

NOTICE

BEFORE SUPPORT IS CALLED:

When installing the software, check whether your organization's IT department has security policies or controls in place that can cause the software installation to be incomplete.

3.0 Features

BeamView.NET software offers the following features:

- Adjustable trigger delay assures a valid laser pulse is captured
- Additional calculations for flat-top beam analysis
- Remote mode interface and new commands
- Plug-and-play for camera set-up; support for multiple cameras
- Set variable aspect ratios for each camera
- Increase in the number of samples that can be captured; save images using industry-standard file format
- Camera information embedded into image files. Software is backwards compatible, to directly import images (.bin, .img, or .png), configuration files (.atc), and test files (.ats) generated by old BeamView software into the BeamView.NET

4.0 Installation and Set-Up

Complete installation of the software ***before*** any hardware is connected.

CAUTION

When a Low-Distortion Face Plate (LDFP) is installed in the camera unit, special safety precautions must be taken to avoid damage to the sensor. See 'Safety Precautions for Cameras' on page 6 for more information.

4.1 Software System Requirement

This section describes system requirements:

- Windows 10 (32- or 64-bit)
- 2.5 GHz processor or faster
- 2 GB of RAM or higher
- 5 GB of available hard disk space
- USB 2.0 or RS-232 port

4.2 Install the Software

1. To download the software and drivers necessary to install and operate the BeamView.NET software, go to the Coherent website.

   https://www.coherent.com/resources

NOTICE

To avoid instability of the application, it is strongly recommended that to first disable computer hibernation or suspend mode before installing the software.

2. Save the installation files to the computer.

NOTICE
It is recommended to use Administrator privileges to install and run software.

3. Double-click to start the installation, where 'x' is the latest version:

   `BeamView_5.0.3.x.exe`

   - If **`AutoRun`** is enabled on the laptop or computer, installation starts automatically.

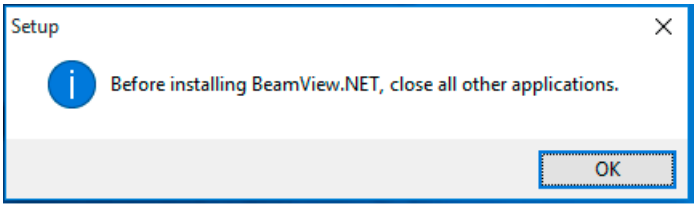
     If it does not start automatically, select **Run** from the Start menu and enter the location of the installation file on the computer.

4. Follow the on-screen instructions to complete installation, described in the steps that follow.

For any issues with software installation, see troubleshooting tips in the *BeamView.NET Operator Manual* (PN1416724). It is available on the Coherent website at:

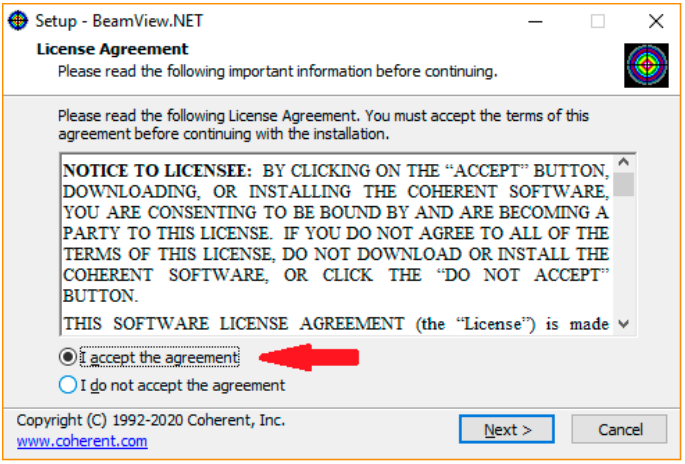
https://www.coherent.com/resources

5. When this reminder popup displays, close all other applications and then click OK.

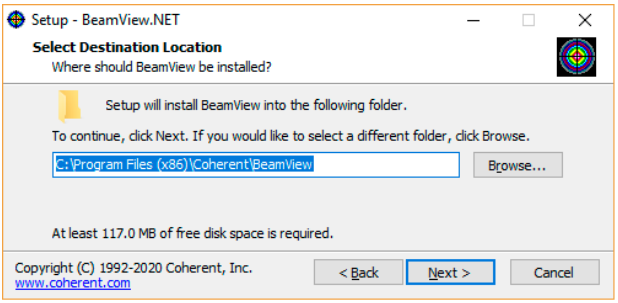


The License Agreement for BeamView.NET displays.

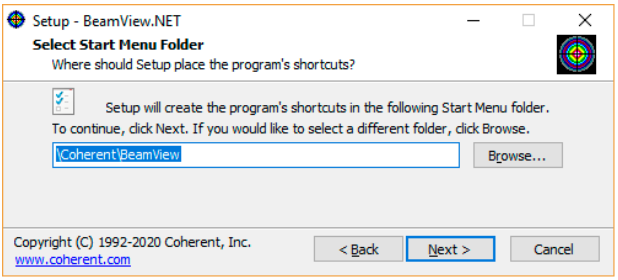
6. Select the radio button to Accept the agreement, then click Next to proceed with the software installation. Otherwise, click Cancel to stop the software installation.



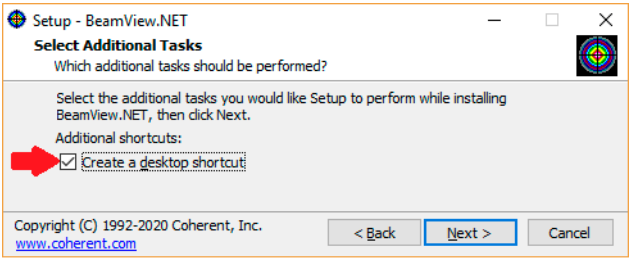
7. Review the directory shown in the 'Browse' line. When the correct directory is selected, click Next.



8. Review the Start Menu directory that is displayed. If acceptable, click Next, or select a different location, and then click Next.

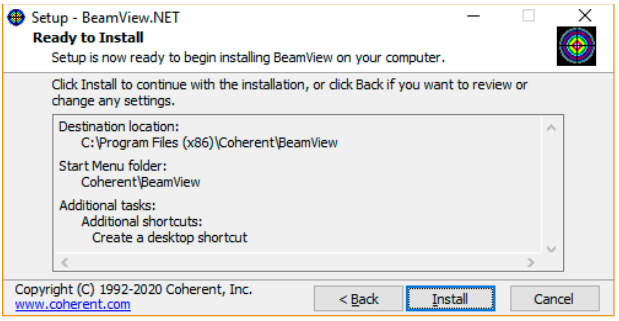


9. This option allows users to create a desktop shortcut. Click the checkbox, if desired, and then click Next.

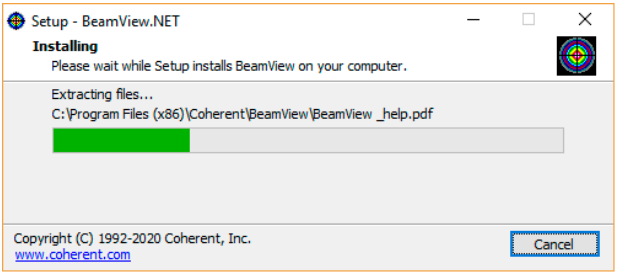


4.2.1 Preview Set-Up

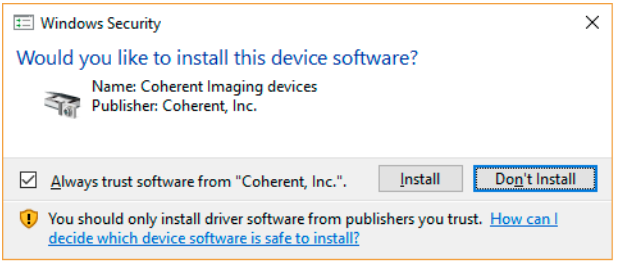
The example screen shows the selections made. To change any settings, click Back. Otherwise, click Install.



A progress bar displays during the installation.



Because the software installation includes device drivers, another screen displays to request confirmation:

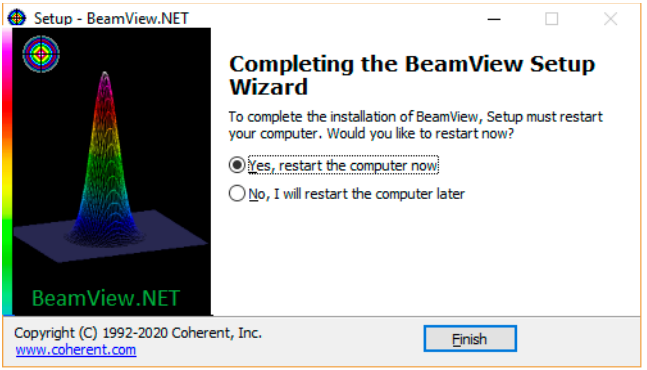


Click Install to continue and follow the prompts.

4.2.2 Complete Set-Up

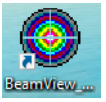
When installation is complete, the final set-up screen is displayed. See the example screen, below.

- Select **Yes** or **No** to restart the computer, then click Finish.



4.2.3 Start the BeamView.NET Software

1. Start the BeamView.NET software. To do so, double-click the desktop shortcut icon that was placed on the desktop during installation.



A splash screen like the one below is briefly displays:

For more information, go to the Coherent website and download the *BeamView.NET Operator Manual* at:

https://www.coherent.com/resources

4.3 Connect Hardware

For detailed instructions about setting up hardware, see the *User Manual* for the appropriate camera, or check the HELP files or the *BeamView.NET Operator Manual*.

NOTICE

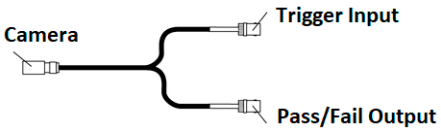
Complete installation of the software before any hardware is connected. Also read special safety precautions when using a camera that has a Low-Distortion Face Plate (LDFP) installed in the camera unit.

After the BeamView.NET software is installed, connect the following:

1. To establish a connection with a PC, connect the USB cable into the camera and into the USB port on the PC. The LaserCam-HR

cameras require only a standard USB cable (shipped with the camera) and a computer with a USB 2.0- compliant port.

2. If the camera is to be used with an external trigger, connect a 'Y' cable. Connect the camera end by rotating the cable until the orientation matches, and then pushing the connector securely onto the mating connector.

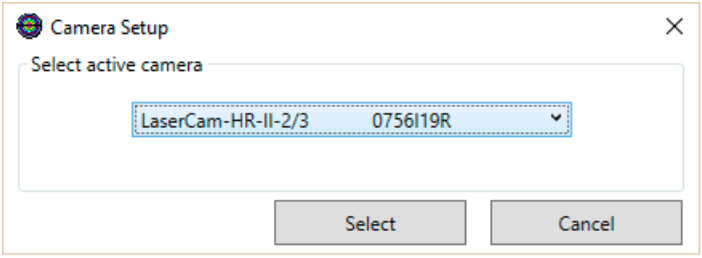


This allows connection of an external trigger source through a BNC receptacle (plug-style connector). The other end connects a TTL-level pass/fail output signal generated by BeamView from user-configured calculation settings.

See the HELP files or the *BeamView.NET Operator Manual* for informa-tion about configuring software for an external trigger.

3. After the camera is plugged in, wait a few seconds for the computer to recognize that hardware.
4. In the BeamView.NET software, click the Setup tab.

5. Click the Camera icon in the toolbar. A pop-up dialog box displays the model of camera connected:



If multiple cameras are later connected, the dialog box displays a drop-down menu that lists all cameras connected.

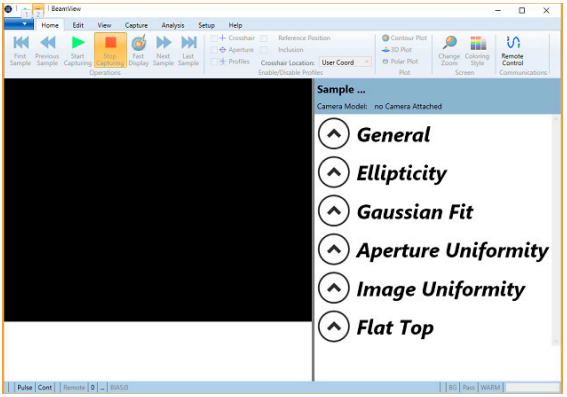
6. Click Select to choose the camera that is needed to use. A User-Defined ID Number is displayed. Click OK.

NOTICE

When a Low-Distortion Face Plate (LDFP) is installed in the camera unit, special precautions must be taken to avoid damage to the sensor. See ’Safety Precautions for Cameras’ on page 6 for more information.

5.0 BeamView.NET Interface

The first screen that is displayed for the software is shown here.



For details about the functions and operations of commands in each window, see detail in the HELP files or the *BeamView.NET Operator Manual*. To download software or the manual, go to:

https://www.coherent.com/resources

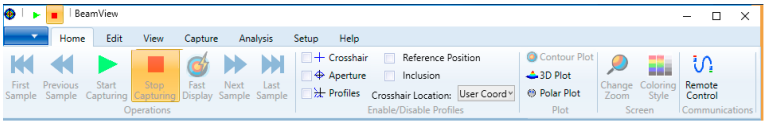
5.1 Main Screen Tabs

The set of tabs across the top of the BeamView.NET software application include the following windows.

- Home
- Edit
- View
- Capture
- Analysis
- Setup
- Help

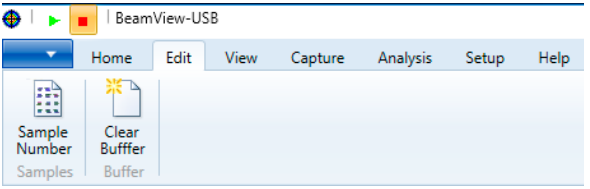
5.1.1 Home Tab

The Home Tab lets users select the sample, start and stop capture, as well as whether to include crosshair, aperture, profiles or reference positions for the sample. Users can also select the level of zoom and coloring style.



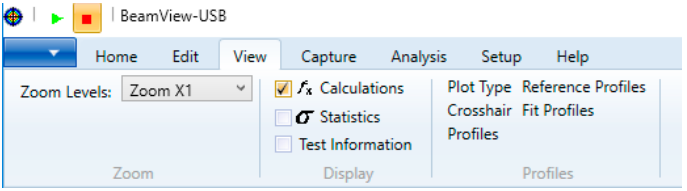
5.1.2 Edit Tab

The Edit tab lets users select the current sample displayed, copy the view plot or selected results to the clipboard, and clear the image data buffer.



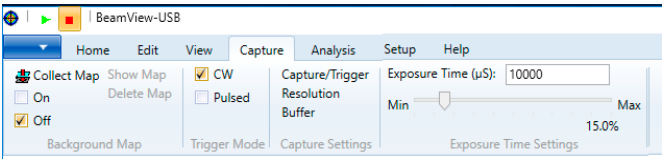
5.1.3 View Tab

On the View tab, users can select the level of zoom, display calculations, statistical results, and/or test results. Also, users can configure crosshair and various profile settings.



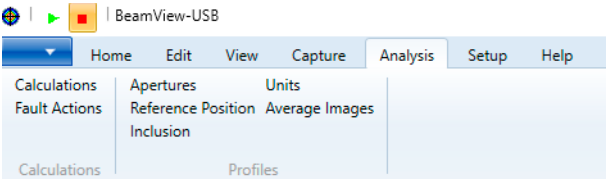
5.1.4 Capture Tab

On the Capture tab, users can choose to show or delete the Collection Map, enable Continuous Wave (CW) or Pulsed capture operations, select trigger operations, the resolution and depth, as well as configure the storage buffer for samples. Users can also specify the exposure time.



5.1.5 Analysis Tab

The Analysis tab provides commands to select analysis calculations, configure pass/fail options, configure overlay apertures, define reference coordinate positions, define inclusions areas, select system display units, and select averages.

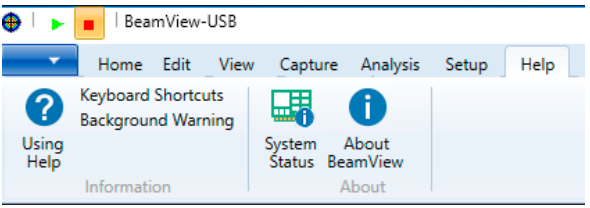


5.1.6 Setup Tab

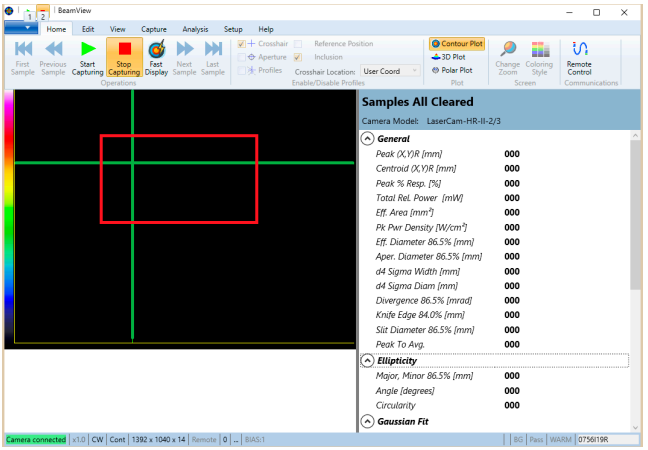
The Setup tab lets users adjust properties for the selected camera, define input power/energy for calibrations, set the input optical magnification scale, input far-field optical focal length, and set password protection for configuration settings.

5.1.7 Help Tab

The Help tab displays contents of the Help file, lists shortcuts, displays status for both system and background warning status, and license and copyright information for the software.



After a camera is connected, notice that the Home tab now expands the content on the right side of the screen, shown next.



For more information …

For details about the functions and operations of commands in each window, see detail in the HELP files or the *BeamView.NET Operator Manual*. It is available at:

https://www.coherent.com/resources

6.0 Service and Support

This section provides information about:

- How to contact Product Support
- How to obtain service
- Product shipment instructions

6.1 Contact Product Support

Coherent provides telephone and web-based technical assistance as a service to its customers and assumes no liability thereby for any injury or damage that may occur contemporaneous with such services.

For general Technical Support, contact a local Coherent Service Representative as described on the following page, or contact Coherent as follows:

- By phone: 1-(408)-764-4557 or 1-(800)-367-7890
- By e-mail: Customer.Support@Coherent.com
- To view a list of contact names, telephone numbers, and addresses worldwide, visit our website: www.Coherent.com

NOTICE

Under no circumstances do these support services affect the terms of any warranty agreement between Coherent and the buyer. Operation of any Coherent laser with any of its interlocks (or safety features) defeated is always at the operator's own risk.

For information about sensor products, go to:

https://www.coherent.com/laser-power-energy-measurement

Please be prepared to provide the following information:

- Model or part number of the unit
- Serial number of the unit

- A description of the problem
- Any corrective steps that may have attempted

6.1.1 Support in the USA and North America

If shipping products from within the United States or North America, contact LMC Technical Support directly, as follows:

- By phone: North America (800) 343-4912 or (408) 767-4042
- By e-mail: customer.service@coherent.com

Telephone coverage is available Monday through Friday (except during U.S. holidays). Inquiries received outside normal office hours are tracked by our automatic answering system and promptly returned the next business day.

6.1.2 International LMC Support

For users located in Europe or Asia, contact LMC Technical Support directly, as follows:

- Germany: +49–6071–968–0
- Japan: +813–5635–8680

6.2 Obtain Service

To obtain service under this warranty, Customer must notify the Company of the defect before the expiration of the warranty period and make suitable arrangements for the performance of service.

The Company shall, in its sole discretion, determine whether to perform warranty service at the Customer's facility, at the Company's facility, or at an authorized repair station.

If Customer is directed by the Company to ship the product to the Company or a repair station,

Customer shall:

- Package the product (to protect from damage during shipping) as instructed in 'Product Shipping Instructions' next.
- Ship it to the address specified by the Company, with shipping prepaid. back to Coherent in conjunction with recalibration and recertification.
- Coherent shall pay the cost of shipping the Product back to the Customer in conjunction with product failures within the first twelve (12) months of time of sale or during an extended 12-month warranty period.

6.3 Product Shipment Instructions

Users must include a Returned Material Authorization number (RMA) assigned by the Company on the outside of all shipping packages and containers. Items returned without an RMA number are subject to return to the sender.

To prepare a product for shipping to Coherent:

1. Contact Coherent Customer Service (see 'Contact Product Support' in the next section) for a Return Material Authorization number.
2. Attach a tag to the product that includes the name and address of the owner, the person to contact, the serial number, and the RMA number received from Coherent Customer Service. Pack this tag inside the box.
3. Use the original shipping and packaging materials, and pack the product. If the original packing materials are unavailable, Wrap it with polyethylene sheeting or equivalent material.
4. Make a seal on the shipping carton with shipping tape or an industrial stapler.

5. Add the RMA number received from Coherent Customer Service to the shipping label on the outside of the box.
6. Ship the product to the following address:

USA

Coherent Laser Measurement and Control Service Center
Attn: (the given RMA number)
27650 SW 95th Avenue
Wilsonville, OR 97070

Europe

Coherent Shared Services B.V.
Dieselstr. 5 b
D-64807 Dieburg
Germany

Asia

Coherent, Inc. Japan
Atsugi Technical Center
Toda 1042-4
Atsugi, Kanagawa Prefecture
243-0023, Japan

COHERENT

INNOVATIONS THAT RESONATE

部件名称 Part Name	有害物质 Hazardous Substances						
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)	
电缆装配 Cable Assembly	X	O	O	O	O	O	
本表格依据SJ/T 11364的规定编制							
O: 表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572规定的限量要求以下。 X: 表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572规定的限量要求。							

Download software and manuals at https://www.coherent.com/resources:

1416725 AC

BeamView.NET Quick Start Guide

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Part Number 1416725, Rev AC