

Quick Start Guide



Guidestar II

Parts Included

Minimum Components Required

- 1 x 8783 – Controller and software package (included)
- 2 x 8784 – Camera
- 2 x 88XX – Motorized mirror mount
- 1 x PC Computer

Extra items:

Mirrors, beam pickoffs, mounts, pedestals, forks



STEP 1 - Setup the optical system

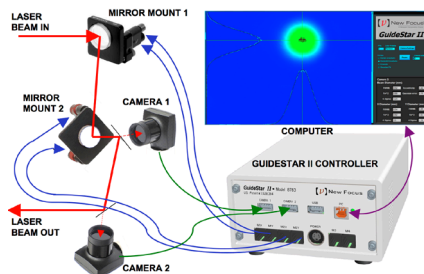
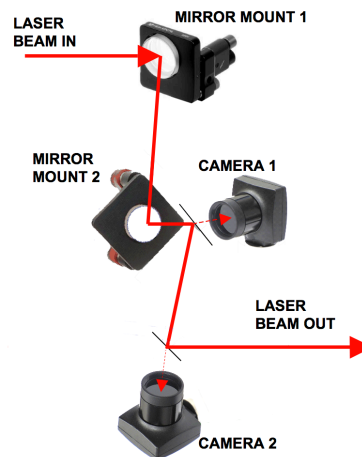
Separation Between Components

The best control is achieved when MM1 and MM2 are separated as much as possible and also CAM1 and CAM2 are separated by as much as possible. We therefore advise setting up MM1 close to the beam origin, CAM1 directly following MM2 somewhere in the middle, and CAM2 imaging the beam destination.

Beam Pick-offs for Cameras

The power required for the cameras is very low so we recommend using the leakage through normal HR mirrors already in the beam train as beam "pickoffs." Other options include reflections off AR surfaces or uncoated beam-splitters in the beam.

Plug components into the controller in their corresponding connection



Minimum PC Requirements

Software:

Windows 7 / Windows 10 – 32 bits, 64 bits (all: Standard, Ultimate, Professional, Home Premium)

Hardware:

PC: Desktop, Laptop

Processor:

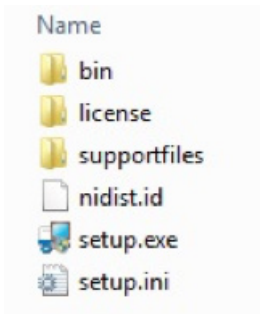
- AMD DUAL CORE, AMD QUAD CORE
- Intel Pentium Dual Core, Intel Pentium Quad Core, Intel Pentium Core (i3 , i5 , i7)
- RAM 4GB minimum
- HDD 160GB minimum
- DVD player
- Screen resolution HD: 1920x1080 minimum (shared video or dedicated video)
- Monitor
- HD 1920x1080 pixels minimum

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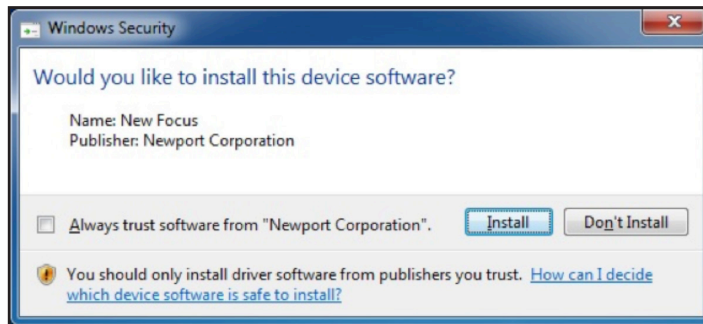
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STEP 2 - GuideStar II Installation

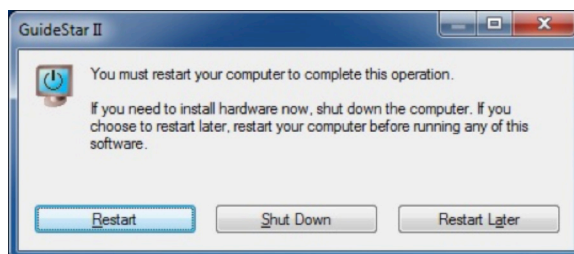
1. Download the installation .zip file, if necessary.
2. Extract the .zip file contents into the user specified destination folder if the installation files are contained in a .zip file.
3. Locate the root folder of the installation files and run setup.exe to begin installation.



4. Follow the instructions given in the GuideStar II Setup.
5. When the GuideStar II Setup reaches the screen titled "Installation Complete" and says "The installer has finished updating your system", click the Next button to begin installation of the 8783 USB driver and the IDS camera software. The IDS camera software will automatically install in the background and so there is no user interaction for this.
6. Click the Install button to install the 8783 USB driver.



7. After the 8783 USB Driver and the IDS camera software are both installed (when all black command windows have been automatically closed by the installation program), click the Restart button to reboot the PC and finish installation

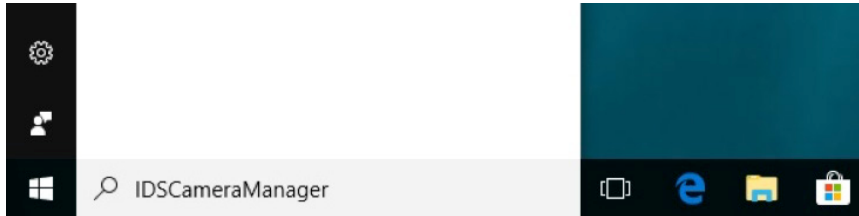


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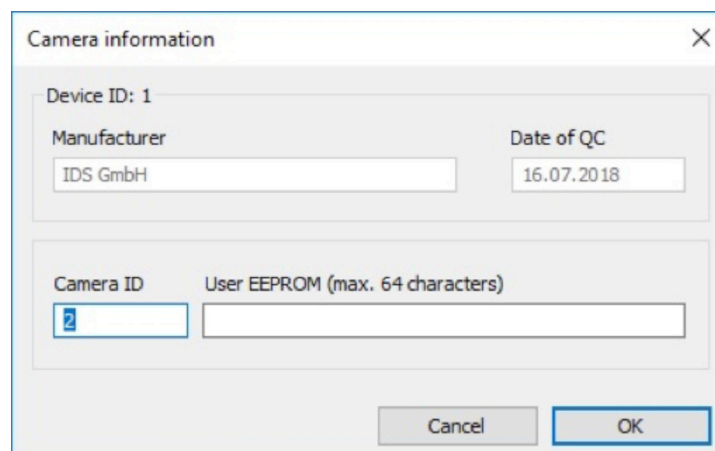
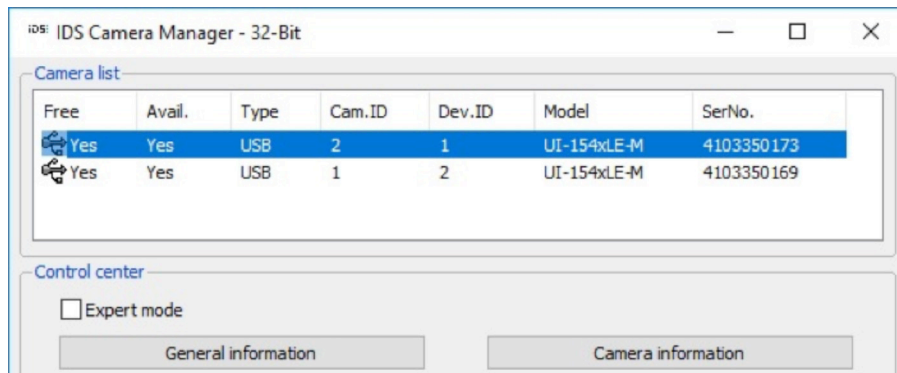
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Step 3 - Camera Configuration

1. Run Camera Manager by entering "IDSCameraManager" in the command search box (located at the lower left corner of the PC desktop) or navigate to \Windows\System32 and double-click (or open) "IDSCameraManager".

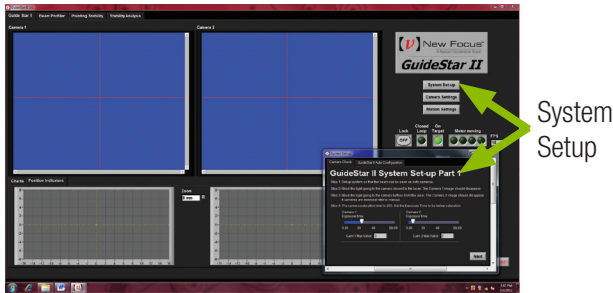


- If the GuideStar II and its corresponding components are not yet set up then go back and complete steps 1 and 2 of Setup
2. Confirm the camera serial number (on the back of the camera) corresponds to the appropriate Camera ID.
 - If the cameras don't correspond, click the Camera Information button and change the Camera ID.
 - Note: Check the Camera ID any time after unplugging the system.

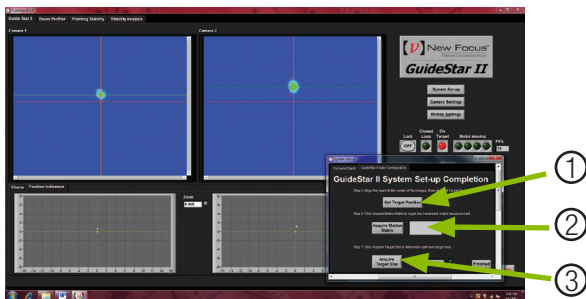


STEP 4 - Configure the System

1. Open GuideStar II program (desktop icon).
2. Follow the system set-up steps.
 - Note: If system set-up window is not open, click on "System Set-up".
 - After completing part 1 "Camera Check", click "Next" and complete part 2 "Auto Configuration".



- Adjust the mirrors so that the beam is on target and click on "set target position".



Fixed beam wavelength (typical)

Laser

Laser Wavelength: 355 nm - 1200 nm

Laser Repetition Rate: >500 Hz** to CW

Laser Beam Size: <10 mm diameter

Detected Power Required: <1 mW

Beam Position Control

Beam Pointing Adjustment Range: +/-3 degrees, +/-50 mrad

Minimum Pointing Step Size: <1 mrad

Response Time: <10 seconds

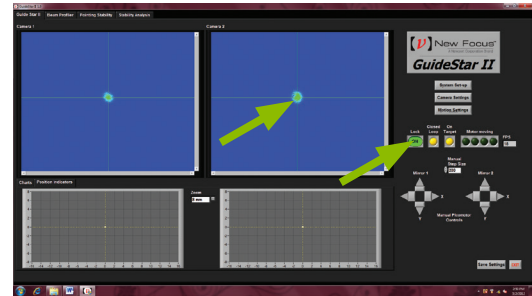
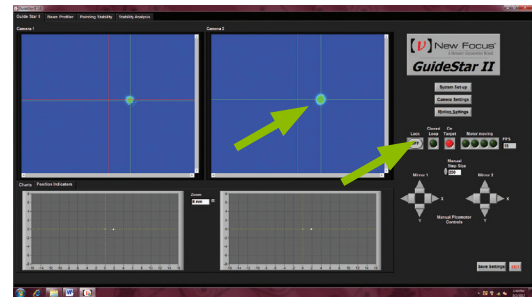
Refresh rate for beam profile and display: >3 Hz

* Specifications are subject to change.

**Low repetition rate external trigger available on request. Contact New Focus for more information.

STEP 5 - Locking the Beam Target Position

1. Once the beam is on target push the "Lock" button to keep the system actively aligned.
2. Make sure "Lock" is off to move or adjust the beam. complete part 2 "Auto Configuration".



GuideStar II System Components

GuideStar II Controller Model 8783

USB connections to Cameras and Computer

RJ-22 connections to Picomotor Mirror Mounts

GuideStar II Camera Sensor Model 8784 (two per system)

Image Size: >10 mm diameter

Beam Position Resolution: <1 mm

Picomotor Mirror Mounts Model 8807* (two per system)

*Alternate Model #s: 8809, 8812, 8816, 8852, 8885, 8886, 8887

User Computer

Full HD Display: 1920 x 1080

64 and 32 Bit Windows 7