

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

Minimum PC Requirements

Software:

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

Windows XP – 32 bits only

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

STEP 1 - Setup the optical system

Separation Between Components

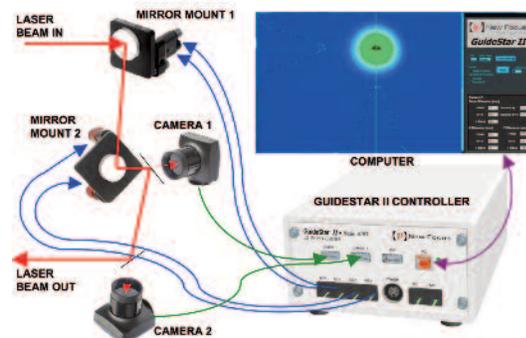
The best control is achieved when MM1 and MM2 are separated as much as possible and also CAM1 and CAM2 are separated by as much as possible. We therefore advise setting up MM1 close to the beam origin, CAM1 directly following MM2 somewhere in the middle, and CAM2 imaging the beam destination.



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

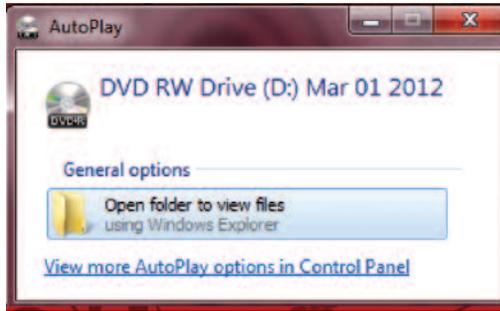


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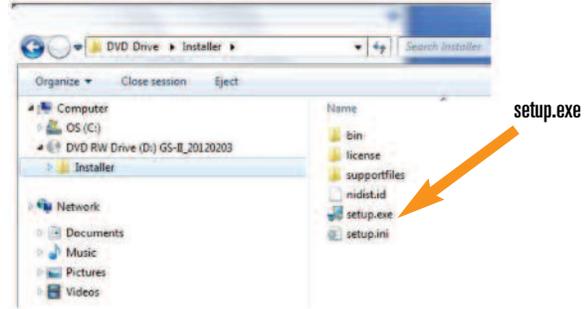
GUIDESTAR II

STEP 2 – Software Installation

Insert installation DVD into the computer.



Find and run the setup file.



Follow the windows installation steps. Choose the options below when prompted. Hit "Restart later" to begin camera software installation.

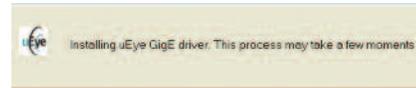
If you restart now you will need to rerun the setup to finish the camera software installation.

STEP 3 – Camera Software

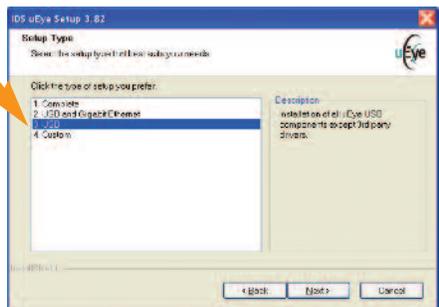
Install Driver



If you chose a different option and got stuck on the screen below, close the installation window and restart the setup.



Choose option 3 (USB)



Install

Camera Software continued

Note: If you encounter window verification allow the install

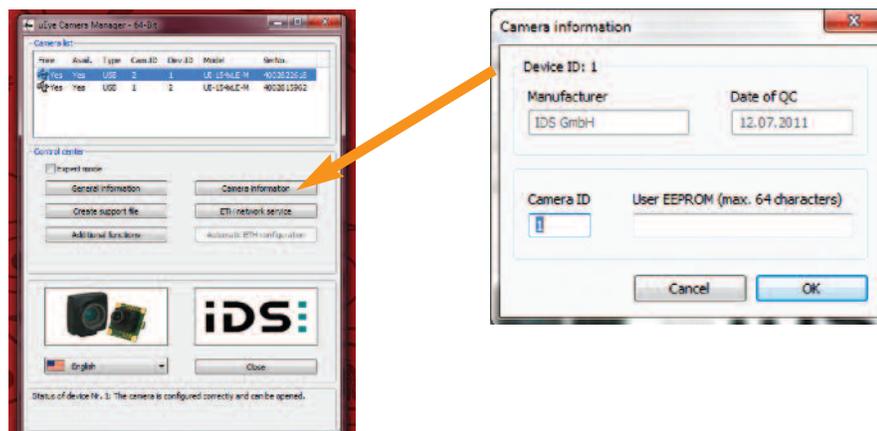


A quick start to the camera features window will open. During initial install close window to complete software download.

Now restart the computer to ensure proper communication.

STEP 4 – Configure Cameras

1. Open camera manager to configure cameras (desktop icon).
 - If you haven't already set up GuideStar II and corresponding components, go back and complete steps 1 and 2 of Setup.
2. Confirm camera serial number (on back of camera) corresponds to appropriate cam id.
 - If cameras don't correspond, click on camera information and change the cam id. Close when complete.
 - Note: Check cam id anytime after unplugging the system



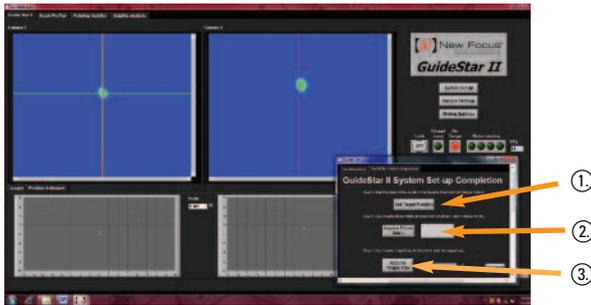
STEP 5 – Configure the System

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".



System Setup

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



GuideStar II System Specifications*

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 μrad

Response Time: <10 seconds

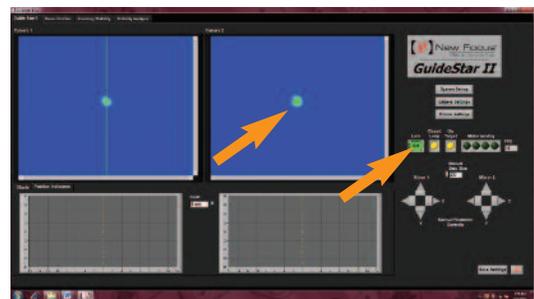
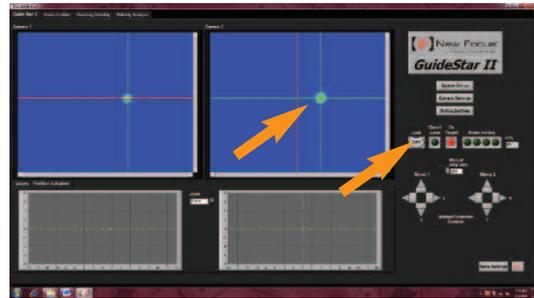
Refresh rate for beam profile and display: >3 Hz

*Specifications are subject to change.

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

STEP 6 – 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.



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 μm

Picomotor Mirror Mounts Model 8807* (two per system)

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

User Computer

Full HD Display: 1920 x 1080

64 and 32 Bit Windows 7



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DS-031203 (3/12)