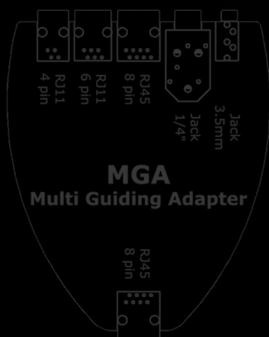
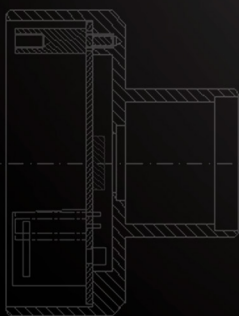


LVI CAMERAS

SMARTGUIDER²

Imaging Control System



The Ultimate Tool for Astrophotographers

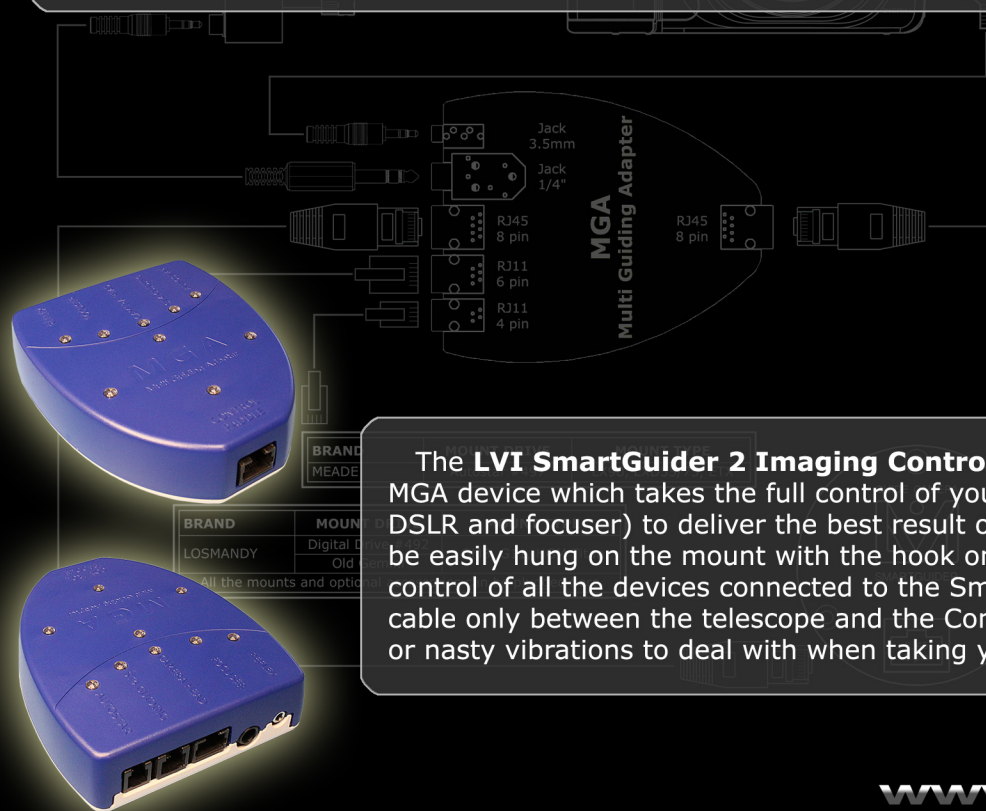
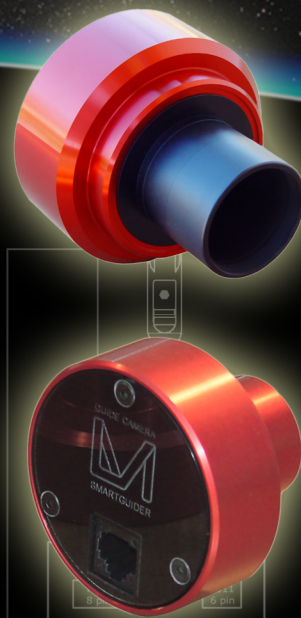


BEYOND AUTOGUIDING

The **LVI SmartGuider 2 Imaging Control System** goes beyond the simple concept of autoguiding. Astrophotographers know well that autoguiding is vital for obtaining clear and crisp long-exposure photos with pinpoint star resolution, but that's not all. Final images are the result of a complex process handled by different devices which must all work together flawlessly in order to get the desired photo quality. But in most of cases, the process isn't flawless.

AN INTEGRATED SOLUTION

The **LVI SmartGuider 2 Imaging Control System** is an integrated solution which does the whole process required to make unparalleled astrophotos in a fast, funny and easy way! No longer do you need the laptop, the reflex remote switch, the focuser control and other gadgets in the field: the elusive beauty of the Universe will now just be a few clicks away from your dreams!



THE MGA DEVICE

The **LVI SmartGuider 2 Imaging Control System** comes with the special MGA device which takes the full control of your imaging equipment (mount, DSLR and focuser) to deliver the best result out of your telescope. The MGA can be easily hung on the mount with the hook on its back. This allows the remote control of all the devices connected to the SmartGuider 2 camera through one cable only between the telescope and the Control Paddle! No more wire tangles or nasty vibrations to deal with when taking your long exposed pictures!



ADVANCED REFLEX CONTROL

The REFLEX section managed by MGA device controls a variety of Canon, Nikon, Pentax and Sony cameras by handling the same parameters that are usually managed by commercial software.

1. **Exposure** with single shots.
2. **Bracketing** - When switched on, the camera automatically takes a new sequence with an exposure as shorter as the stop down set.
3. **Number of shots.**
4. **Pause between consecutive shots** - for sensor cooling.
5. **Mirror lock-up** - to avoid vibrations caused by the mirror flip prior the shutter release.
6. **Dark framing** - When switched on, the camera automatically takes a new sequence when the telescope has been capped.
7. **Delayed start** - When switched on, the camera starts to capture images after the set time has expired.
8. **Statistical info** - Two windows with all parameters displayed.

ADVANCED FOCUSER CONTROL

The FOCUSER section managed by MGA device takes control of all Baader Steeltrack and Starlight FeatherTouch focuser when their dedicated motor drives (to be purchased separately) are plugged in. The MGA supplies power to the motor through 3xAA batteries placed inside the MGA unit.

1. **Focuser model selection** from an internal database.
2. **Automatic calibration** for absolute positioning.
3. **Temperature compensation** with an external thermo probe.
4. **Temperature coefficient self-learning** in an automatic way.
5. **Permanent saving** of one T coefficient.
6. **Manual adjustment** of the T coefficient.
7. **Statistical info** with parameters.



BRAND	MOUNT DRIVE	MOUNT TYPE
MEADE	Autostar #497	LX90, LXDS55/75, ETX

BRAND	MOUNT DRIVE	MOUNT TYPE
LOSMANDY	Autostar #492	LX90, LXDS55/75, ETX

All the mo

AUTOSTAR & LOSMANDY

The advanced and opto-coupled autoguiding port in the MGA unit enables non-simultaneous corrections to the RA and DEC axes useful to get a perfect au-toguiding also with the old Losmandy #492 digital drive.

A dedicated AUTOSTAR port enables the autoguiding also through all Meade mounts with Autostar #497 (LX90, LXDS55/75 and ETX series) as never before!

ADVANCED AUTOGUIDING

The **LVI SmartGuider 2 Imaging Control System** allows better control over more useful parameters to achieve professional guiding results in any condition. New options are:

1. **DITHERING** - allows a small framing displacement between Reflex single shots when activated. This will remove cold pixels (black "holes" in the raw images) out of the final image when dark frames are removed and the subject is perfectly stationary in the same portion of the imaging sensor.
2. **PULSE GUIDE** - sets the duration of the corrective pulse. Together with the AGGRESSIVENESS, this parameter helps in better tuning the right correction to the mount avoiding dangerous overcorrections.
3. **THRESHOLD** - allows for hot pixel removal by adjusting the background noise level. Pixels having an ADU value lower than threshold value are not considered by SmartGuider 2 camera while searching for a guide star. This avoids hot pixels being considered as fake stars.
4. **MAX EXPOSURE** - sets the max exposure limit to adjust the camera sensitivity and reaction.

SPECIFICATIONS

GUIDING CAMERA

Image sensor.....Mono 1/3" Aptina MT9V032
 Sensor format.....752x480 pixel, 6 square micron
 Active area.....4.51x2.88mm (5.35mm diagonal)
 Exposure.....AUTO, 0.001 - 4 seconds
 MAX Exposure.....MAN, 1 - 4 seconds
 Telescope interface.....1.25" barrel with filter thread
 Dimensions and weight.....DxH=65x50mm, Weight=110g
 Limiting magnitude star.....Up to Mv=9 with 80mm aperture

CONTROL PADDLE

Housing.....ABS black color
 Keyboard.....Membrane, with 3 backlit buttons
 Display.....Graphical 2.5" LCD, 128x64 pixel, backlit
 Dimensions and weight.....LxHxW: 55x96x28mm, Weight: 220g
 Power supply.....6-14V DC, 90-120 mA

MGA UNIT

Output connectors.....REFLEX, FOCUSER, ST4, AUTOSTAR, GUIDING CAMERA
 Dimensions and weight.....LxWxH=118x102x33mm, Weight=125g
 Battery holder.....3xAA batteries for FOCUSER section only

FEATURES

- Automatic star search function
- Noise Threshold adjustable to avoid Hot Pixel
- Real time with focus and position with guide star on the 2.5" LCD screen
- Automatic axes calibration with permanent saving
- Screen backlight and beep sound adjustable
- Dithering for star displacement.
- Aggressiveness and Pulse Duration adjustable
- Sub-pixel 2X autoguiding (to allow the usage of short guidescopes)
- REFLEX and FOCUSER Advanced Control



BRAND	MOUNT DRIVE	MOUNT TYPE
LOSMANDY	Digital Drive #492 Old Gemini	GMB, G11, HGM Titan
All the mounts and optional accessories can be plugged here		

AUTHORIZED LVI DEALER

