

Service Manual - Only qualified personell!!



Abstract

The new AttaXX MultiColor Projector series is a budget oriented, state of the art lasershow device, which eliminates the need of watercooling or 3-phase power. The projector comes in different output power versions and dimensions, from 1W RGB up to 3.5W RGB, or 5W single color green.

Depending of the optional add ons, different galvos are mounted. Please refer to actual product brochure for details.

Further highlights are the brandnew design, the sandwich mounting plate for good mechanical stability and also less weight. Brand new designed optical mounts ensure a very good optical stability over long terms.

As the first company in the world, MediaLas announced an RGB whitelight projector late 2002, and presented the design early 2003 on Frankfurt's Pro Light & Sound trade show. In the meantime, MediaLas sold and manufactured a large number of MultiColor systems and earned lots of experience in designing a stable and handy whitelight system. In 2008, the multi awarded Infinity showlasers were introduced. In 2009, the AttaXX series was born. By using a sandwich heat exchanger instead of single airflow devices, the optical section has been completely separated from any airflow or heatsink, and comes dust sealed with an anti-reflective coated output window.



Technics of AttaXX laser projectors

All AttaXX projectors are developed, tested and manufactured in Germany by MediaLas. Each projector and its components run through extensive tests and alignment procedures, to ensure a long and stable lifetime. The sandwich heat exchanger not only increases stability, but also reduces thermal effects on the lasers and optics dramatically. Furthermore, active cooled lasers and laser diodes are used.

Due to the nature of high-tech optical equipment used in the optical table section of the Mystique, the devices are more sensitive to external influences than normal lighting devices. Please use this manual for basic hints and tricks for maintenance of AttaXX Laser Systems. In case of any further help, please contact our service staff. Actual phone numbers and contact information is provided on our website at www.medialas.com

Specification of laser output power

All AttaXX laser systems' output power is specified "after the laser", as stated in brochures and websites. The laser output power can be measured inside the housing, after beam combination and collimation BEFORE the scanner mirrors and output window. The procedure is quite simple: Use a 5V signal for all laser inputs, do NOT use a scanning pattern from any kind of software, cause it will disturb your measurement results. Apply 5V signal to positive color inputs pin 5,6,7 and apply ground to negative color inputs pin 18, 19 and 20. Now use a pyro power meter (no laser check!) before the scanner. Here you should have the specified minimum output power. The power is stated as an average output power, with a tolerance of less than +/-10%.

Adjusting the scanners

On normal circumstances and under normal operating conditions, there is no need to readjust the scanners. If, for any case, a readjustment has to be done, please refer to attachments "Scanner tuning".

Aligning the optical color mixing device

After heavy transportation, or after large temperature differences, coming from outside cold ambient to an inside warm ambient, it might be necessary to realign the optical setup inside. Under normal circumstances, the optical section is maintenance free, and does not need to be realigned.

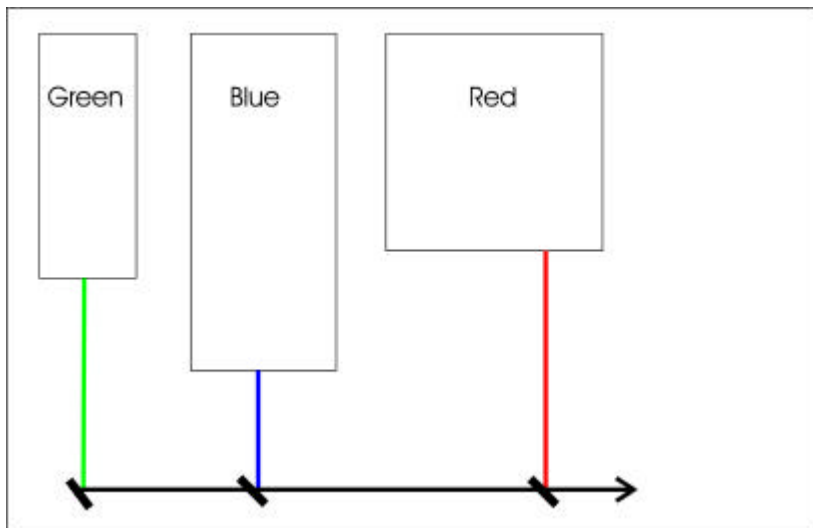
The AttaXX optical section was designed for very easy alignment. The front lid can be opened by the user, to adjust RGB mixing very easily from the front.

Preparations

Remove the screws of the front lid. Lift the lid and unplug the earth connector on the left power supply section of the Mystique. Be sure to work in a dust-free ambient, so the optical section is not contaminated. Now safely store the top cover and avoid touching the output window. During aligning process, also make sure not to touch any optical surface with your fingers. Inside the Mystique, high quality optical components are used, and not all optical surfaces can be cleaned the usual way. Most of the mirrors are very high reflective protected silver mirrors, cleaning is not recommended. If, in any case, the surface is dirty, it is recommended to replace the mirror.

Apply an input signal to the DB25 ILDA connector on the back of the Mystique. You can either do this with an external power supply or a standard laser software by projecting a white dot or small circle.

All AttaXX RGB models:



Basically there are three laser devices for red, green and blue color. Depending on output power and setup of the AttaXX projector, there different laser modules are used, which are coupled and aligned to one single beam. But in any case, each single color is mixed to one beam, before it enters the main optical mixing section.

Procedure is quite easy, but should only be done by an experienced service technician. All color lines must be parallel from the last dichroic filter on the red laser to a distance of minimum 10m projection size.

The green laser beam is your reference of the optical mixing system. Adjust the green beam with the mirror mount. Make sure, the beam is parallel to the base, and hits the galvo mirror properly.

Now adjust the blue laser line in the same procedure. Align both beams properly on top of each other, parallel onto the galvo mirror mount, and, at the same time, parallel in far distance.

Use the same procedure on the red laser.

Finally, all single beams and colors should match on the galvo mirrors and also after a distance of 10-20m. Once the system is aligned, it should not misalign again. During alignment procedure, please check all mirror mounts for proper function and cleanliness.

Cleaning the optical surfaces

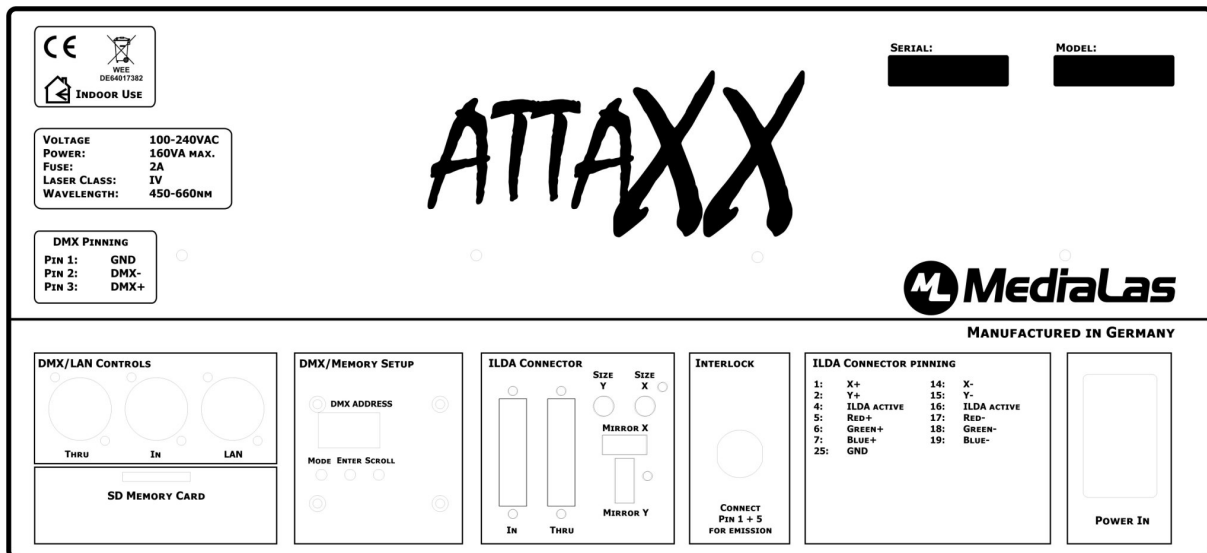
Some of the optical surfaces in your AttaXXsystem are made for very high reflectivity, such as mirror surfaces etc. Reflectivity of more than 98% is obtained only, if the mirror surface is free of dirt or fingerprints. Also, lenses and filters depend on a clean surface for maximum efficiency.

Unfortunately, a cleaning of the silver mirrors in your AttaXX is only possible once or twice. Since the optical section is dust free and also air free, there should not be any contamination of these mirrors. During alignment process, and any time, the case top is lifted or unmounted, please make sure, to work in a clean environment with minimum dust particles. The lesser your particles, the better your results. In the unlikely case of a dirty or contaminated mirror surface, you can try to clean the mirror with simple glass cleaner and a very mellow paper tissue. Do not use any alcoholic cleaner such as Aceton or Methanol! If cleaning is not possible, the mirror has to be exchanged.

Other optical coated surfaces can be cleaned the same way, with standard glass cleaner and a mellow paper tissue just as Kodak Lens Paper. Make sure not to leave any traces of the cleaner fluid on your surface. Do not rub or press on the surface of the mirrors.

Color filters can also be cleaned easily, since the coating is much harder than the ones on the mirrors. Make sure to avoid any rough treatment.

Connections and adjustments



The rear panel of the AttaXX shows several connectors and adjustment features. Main control of the projector is the ILDA compatible connector. It supports full RGB, differential XY signals, and automatic switching between ILDA connector and internal player board, or LAN board, if applicable. The pin connection is described on the back of the AttaXX, here is a summary:

DB25 male connector:

1:	X input +
2:	Y input +
5:	Red +
6:	Green +
7:	Blue +
14:	X input -
15:	Y input -
18:	Red -
19:	Green -
20:	Blue -
25:	Ground

All signals are available also on the DB25 female connector, for wiring the control signals to a second projector.

Adjusting projection size

Just next to the ILDA connector, you will find projection size adjustments, and mirror switches, to mirror each projection axis in case of rear projection, or upside down mounting. The functions are self explaining.

Connecting to power

The internal power supplies are multi voltage switching power supplies, and will adapt to almost any power source on the planet. Use a standard power cord. No switching is necessary.

For US countries, or other countries with low AC voltage, a different fuse might be necessary. In this case, replace the 2A fuse with a 4A type.

Scanfail safety circuit

All AttaXX projectors are equipped with a fast scanfail safety device. It monitors the galvo movements, and shuts off laser beams within a very short time, if a scanfail is detected, or if both galvos stand still without movement. It cannot protect incorrect or dangerous show programming.

We hereby confirm that the following device

AttaXX Full Color Laser Systems

complies with the essential safety requirements, laid down in the regulations of the committee to assimilate the provisions of law of all participating EU states on the electromagnetic compatibility (89/446/EWG).

The device has been classified considering the following EU-norms on electromagnetic compatibility:

IEC 801 Part 3; VDE 0843 Part 3
IEC 801 Part 4; VDE 0843 Part 4
IEC 801 Part 2; VDE 0843 Part 2
DIN EN 55011B; VDE 0875 Part 11
DIN EN 60555-2: 1987
DIN EN 60555-3: 1987

Furthermore, the device is verified in correspondence to the laser class regulations DIN EN 60825-1, if properly set up according to the upper mentioned laser safety regulation.

All AttaXX projectors are : Laser class 4

After installing the device, an inspection and official approval is indispensable for the overall setup. The inspection must follow the european guidelines EN 60825-1 and corresponding regulations for the prevention of accidents BGV-B2.

This declaration is executed on behalf of the AttaXX manufacturer

MediaLas Laserproducts GmbH
Hoelzlestr. 13
D-72336 Balingen

Represented by

Dirk Baur

President
Balingen, 01.10.2009