

User Manual

lightSTUDIO AW Head

Image Engineering GmbH & Co KG

User manual – English copy

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Trade name: lightSTUDIO AW Head
Product name: lightSTUDIO AW Head

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1 About these operating instructions

Before using the lightSTUDIO AW for the first time or starting other work that uses the lightSTUDIO, you must read these operating instructions.

Pay particular attention to **Chapter 2**, "General safety regulations."

1.1 General information

These instructions are intended to simplify the lightSTUDIO AW Head's use and ensure it's utilized for its intended purpose.

The operating instructions contain important information on the proper use and safety of the lightSTUDIO AW Head.

Your attention helps:

- Avoid dangers
- Reduce repair costs and downtime
- increase the reliability and service life of the product

Anyone working with the lightSTUDIO AW Head must read and apply these instructions.

In addition to these operating instructions, the regulations on accident prevention and environmental protection applicable in the country of destination and the place of use must also be observed.

1.2 Presentation of information

Structure of instructions

Instructions for action are divided into:

- Action steps
- Results of the actions
- Application tips for optimum use

Each piece of information is identified by a symbol.



Icon	Meaning
1. 2. 3.	Action steps: These actions are numbered consecutively and must be carried out in the specified order from top to bottom.
✓	Result symbol: The text after this symbol describes the result or intermediate result of an action.
TIP:	Application tip: Additional information on optimal use of the product.

Tab. 1.1 Meaning of symbols

Structure of the warnings

Signal word	Use for ...	Possible consequences if the safety instructions are not observed:
DANGER	Personal injury (imminent danger)	Death or serious injury!
WARNING	Personal injury (potentially dangerous situation)	Death or serious injury!
CAUTION	Personal injury	Slight or minor injuries!
NOTE	Material damage	Damage to the device and the surrounding area

Table 1.2 Warning levels

The warnings are structured as follows:

- Warning sign with signal word corresponding to warning level
- Type of hazard (description of the hazard)
- Hazard consequences (description of the consequences of the hazard)
- Averting danger (measures to prevent danger)



DANGER!

Type of hazard

Consequences of danger

1. Emergency response

Warning signs

Special warnings are provided at the relevant points. They are marked with the following symbols.



General danger zone

This sign warns of personal injury.

If there is a clear source of danger, it is preceded by one of the following symbols.



Crushing hazard

This symbol warns of places where there is a risk of being crushed.



Hand injuries

This symbol warns that hands can be crushed, pulled in, or injured.



2 General safety regulations

2.1 Principles

The lightSTUDIO AW Head is intended for use with a lightSTUDIO AW Mount.

Before putting the appliance into operation, please carry out the checks listed in **Chapter 9**.

Ensure that the device:

1. Is in perfect condition visually.
2. Is properly standing
3. The corresponding lightSTUDIO AW Head variant is fixed firmly on the lightSTUDIO AW HeadMount and is secured with the fastening straps.

The appliance is built per the state of the art and recognized safety regulations. Nevertheless, its use may pose a risk to the life and limb of the user or third parties or cause damage to the appliance and other property.

2.2 Intended use

The lightSTUDIO AW is a lightbox for illuminating a scene with various standardized light types. There are a total of four types of light heads available:

- lightSTUDIO 1AW90 Head
- lightSTUDIO 2AW90 Head
- lightSTUDIO 1AW95 Head
- lightSTUDIO 2AW95 Head

The lightSTUDIO 1AW90 Head version offers an adjustable color temperature from 3000K to 6500K and a color rendering index (CRI) of at least 90. The intensity can be adjusted from 0% to 100%. At an intensity of 100%, an illuminance of over 1800 lux is achieved in the center of a lightSTUDIO AW mount.

The lightSTUDIO 2AW90 Head also enables an adjustable color temperature from 3000K to 6500K and a CRI of at least 90. The intensity



can be set from 0% to 100%. At 100%, the illuminance in the center of a lightSTUDIO AW mount reaches over 3600 lux.

An adjustable color temperature from 2700K to 6500K and a CRI of over 95 is available for the lightSTUDIO 1AW95 Head version. The intensity can be varied from 0% to 100%, whereby an illuminance of over 1700 lux is achieved in the center of a lightSTUDIO AW mount at 100%.

With the lightSTUDIO 2AW95 Head, the color temperature can be controlled from 2700K to 6500K, with a CRI of over 95. The intensity can be adjusted between 0% and 100%, whereby an illuminance of over 3400 lux is achieved in the center of a lightSTUDIO AW mount at 100%.

The homogeneity of all variants is over 70%. There are 25 predefined presets available, and the control is done via software. Firmware updates can also be carried out via the software. The device is intended exclusively for use in closed rooms.

2.3 Foreseeable misuse

Possible foreseeable misuse is listed below:

- Use of power supply units other than those approved by the manufacturer.
- Use without lightSTUDIO AW Mount.
- Operating the lightSTUDIO AW head on an inclined or moving surface (risk of falling or tipping over).
- Incorrect transportation, e.g., lifting or tilting without attached to the lightSTUDIO AW Mount.



WARNING!

Other hazards

Installing a lightSTUDIO AW Head variant on the lightSTUDIO AW Mount can cause other foreseeable hazards.

Two people must carry out the installation.



2.4 Safety regulations

General information

The following organizational instructions must be observed to ensure the safe and efficient operation of the lightSTUDIO AW Head.



WARNING!

Falling or crushing

Injury caused by dropping the appliance
E.g., crushing fingers when falling or setting down.

Only use the side-mounted handles of the corresponding lightSTUDIO AW Head variant to transport the lightSTUDIO AW variant.

Personal protective equipment

No protective equipment is required when using a lightSTUDIO AW Head variant.

During transportation



WARNING!

Other hazards

Danger due to loose assembly leads to separation during transportation.

Before transportation, please ensure that the lightSTUDIO AW Head is firmly attached to the lightSTUDIO AW Mount.



CAUTION!

Loss of stability

The appliance may tip over if placed on an inclined or movable surface.

Ensure that the lightSTUDIO AW Head is first attached to the light-STUDIO AW Mount and then placed on a flat, stable surface.

During installation



WARNING!



Other hazards

Installing a lightSTUDIO AW Head variant on the lightSTUDIO AW Mount can cause other foreseeable hazards.

Two people must carry out the installation.

During commissioning



CAUTION!

Loss of stability

The appliance may tip over if placed on an inclined or movable surface.

Ensure that the lightSTUDIO AW Head is first attached to the light-STUDIO AW Mount and then placed on a flat, stable surface.

Care, maintenance and inspection work

The device is maintenance-free.

Any necessary repairs may only be carried out by specialists appointed by Image Engineering.

Waste disposal

At the end of the service life of a lightSTUDIO AW Head variant, this must be disposed of properly. The lightSTUDIO AW Head contains electrical and electromechanical components. Please observe the national regulations and ensure that third parties cannot use the lightSTUDIO AW Head after disposal.

Contact Image Engineering if assistance with disposal is required.



2.5 Selection and qualification of personnel

There are no special requirements for the quality of the personnel operating the appliance.

2.6 Safety devices

Disconnect the primary cable from the socket to take the appliance out of operation safely.

2.7 Safety signs

The following warnings are attached to the sides of the lightSTUDIO AW Head variants:



Follow instructions

Read the instructions carefully before using the lightSTUDIO AW Head.



General warning signs

Ensure that the lightSTUDIO AW Head is securely mounted on the lightSTUDIO AW Mount and screwed tight.

2.8 Expansion and conversion

Modifications to the appliance are not permitted.

2.9 Fire protection

There are no special requirements for fire protection.



2.10 Actions in an emergency

Take the appliance out of operation.

To do this, unplug the main cable from the socket.

Fire fighting

The lightSTUDIO AW Head variants do not require special protective equipment for firefighting.

If the appliance itself catches fire, use a suitable fire extinguisher (class C).

Expected emissions

The lightSTUDIO AW Head does not contain any particularly hazardous substances. Therefore, no emissions are to be expected.

First-aid measures

No serious injuries are to be expected, even in the event of a fault.

Notify a first responder.



3 Scope of delivery and identification of the product

Scope of delivery

A lightSTUDIO AW Head variant is supplied fully assembled with the lightSTUDIO AW Mount.

The following accessories are supplied:

- USB cable
- Acceptance protocol
- Operating instructions
- lightSTUDIO Software / API

Type plate

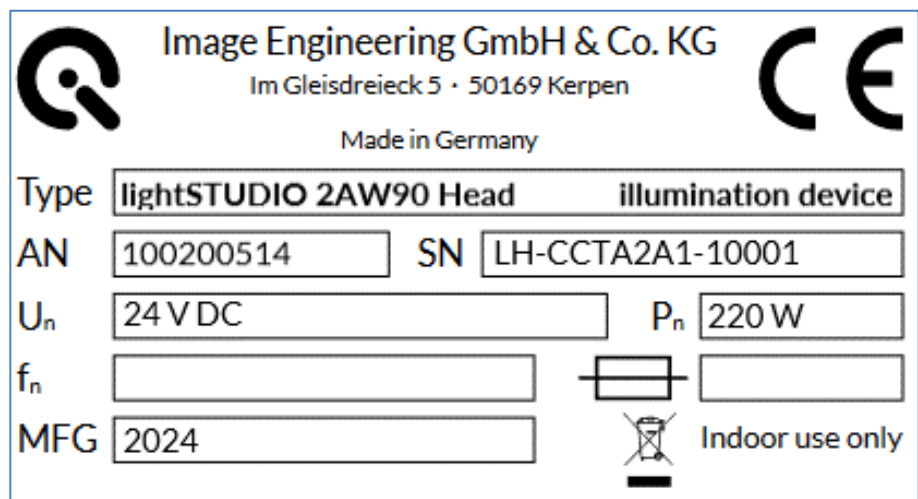


Fig. 3.1 Type plate

Listed are:

1. Manufacturer + address
2. Type = type designation
3. Serial number
4. Nominal voltage
5. Nominal frequency - Not relevant as a desktop power supply is used.
6. MFG = Year of manufacture
7. Rated power



8th Fuse used - Not relevant as a desktop power supply is used.

9. Note: For indoor use only

3.1 Accessories + compatibility list

The lightSTUDIO AW Head is intended for use with the following power supply unit from Mean Well:

- GSM220A24-R7B

The use of other power supply units is not permitted. The power supply unit is not included with the product and should be purchased separately.

The lightSTUDIO AW Head variants can only be combined with the lightSTUDIO AW Mount (article number at Image Engineering: 100210117).



4 Structure and function

4.1 General overview and variants

The lightSTUDIO AW Head uses CCT technology to provide lighting types with color temperatures between 2700 and 6500 Kelvin. It is large enough to illuminate an entire table scene. It should be noted that the lightSTUDIO AW Head variants are supplied fully assembled with the lightSTUDIO AW Mount.



Fig. 4.1 Structure of the lightSTUDIO AW head

As already mentioned in section 2.2, four different variants are available:

- lightSTUDIO 1AW90 Head (article number at Image Engineering: 100200513)
- lightSTUDIO 2AW90 Head (article number at Image Engineering: 100200514)
- lightSTUDIO 1AW95 Head (article number at Image Engineering: 100200515)
- lightSTUDIO 2AW95 Head (article number at Image Engineering: 100200516)

4.2 lightSTUDIO 1AW90 Head

The **lightSTUDIO 1AW90 Head** offers flexibility in adjusting the brightness, providing adjustable light intensity from 0% to 100%. Users can adjust the light color precisely with a color rendering index (CRI) of at least 90 and a variable color temperature from 3000K to 6500K. This variant also enables precise control through the software and offers 25 predefined presets that can be redefined by the customer. Splitting the lighting to illuminate specific areas or details is also possible.



4.3 lightSTUDIO 2AW90 Head

The **lightSTUDIO 2AW90 Head** offers similar functions to the 1AW90 variant but with a higher maximum illuminance of over 3600 lux in the center of a lightSTUDIO AW mount at full intensity. This variant is particularly suitable for applications that require intensive and uniform lighting. The software also controls it, and 25 predefined presets are available, which can be adjusted as necessary. The option of splitting the lighting provides additional flexibility in lighting control.

4.4 lightSTUDIO 1AW95 Head

The **lightSTUDIO 1AW95 Head** is characterized by a color rendering index (CRI) of over 95 and offers an adjustable color temperature from 2700K to 6500K. With an illuminance of over 1700 lux in the middle of a lightSTUDIO AW mount at maximum intensity, this variant is ideal for applications where maximum color accuracy is required. The software also controls it, and 25 predefined presets are available that can be customized. Splitting the lighting enables precise adjustment of the light distribution to illuminate specific areas or details optimally and thus achieve an outstanding result.

4.5 lightSTUDIO 2AW95 Head

The **lightSTUDIO 2AW95 Head** offers similar outstanding features as the 1AW95 variant but with a higher maximum illuminance of over 3400 lux in the center of a lightSTUDIO AW mount at full intensity. With a color rendering index (CRI) of over 95 and a variable color temperature from 2700K to 6500K, this variant ensures that colors can be displayed accurately and true to life. It is controlled by the software, which gives the user complete control over the lighting. The 25 predefined presets allow users to switch between lighting scenarios and adjust them as required quickly. The option of splitting the lighting opens up additional possibilities for fine-tuning the light distribution and ensures that every scene is optimally illuminated.



4.6 Interfaces

The lightSTUDIO AW Head variants are controlled via a PC using USB.

4.7 Functional diagram / functional sequence

Functional sequence without using the software:

1. Switch on the lightSTUDIO AW Head.

For detailed instructions on using the device without software, see **Chapter 6**.

Functional sequence with the use of the software:

1. Ensure there is a USB connection if you want to operate the device using the software.
2. Start the lightSTUDIO software

For detailed instructions on how to use the software, see **Chapter 8**.



5 Transportation and storage

5.1 Transportation

Requirements for the installation site

Set up the lightSTUDIO AW Head on a stable, level surface with the lightSTUDIO AW variant already mounted.



CAUTION!

Loss of stability

The appliance may tip over if placed on an inclined or movable surface.

Ensure that the lightSTUDIO AW Head is first attached to the light-STUDIO AW Mount and then placed on a flat, stable surface.

Transporting the device

Before transportation, if a lightHEAD variant is mounted, make sure that it is secured with the screw. Only use the side-mounted handles of the corresponding lightHEAD AW variant to transport the lightSTUDIO AW mount.



WARNING!

Falling or crushing

Injury from dropping the appliance
E.g., crushing fingers when setting the device down.

Only use the side-mounted handles of the corresponding lightSTUDIO AW Head variant to transport the lightSTUDIO AW variant.



Unpacking the device

The lightSTUDIO AW Head is assembled with the lightSTUDIO AW Mount and delivered in a wooden box.

To unpack:

1. Open the box.
2. Remove the plastic bag containing the documentation and accessories.
3. Remove the lightSTUDIO AW Mount with the mounted lightSTUDIO AW Head.

5.2 Storage

Requirements for the storage location

- Temperature range: 10-35°C
- Sand and dust-free environment
- Humidity: 10 ~ 95% RH, no condensation



6 Installation and commissioning

6.1 Installation

The appliance may only be operated indoors.

Place the lightSTUDIO AW Mount with the corresponding lightSTUDIO AW Head variant on a stable, level surface.

The lightSTUDIO AW Mount with the mounted lightSTUDIO AW Head version requires a footprint of 134 x 84 cm and an additional 15 cm of space at the rear for the connection cables and the power supply unit.



CAUTION!

Falling or crushing

The appliance may tip over if placed on an inclined or movable surface.

Ensure the lightSTUDIO AW Mount is placed on a stable surface and securely connected to the lightSTUDIO AW Head.

Carry out installation

Connect the corresponding lightSTUDIO AW Head variant to the PC using the USB cable.



Figure 6 - 1 Connection via the USB cable



Establish supply

The lightSTUDIO AW variants are supplied without a power supply unit (see Figure 6-2).



Abbildung 6 - 2 lightSTUDIO AW Head without power supply

Connect the corresponding lightSTUDIO AW Head variant to the mains via the power supply unit.



Figure 6-2 Connecting the lightSTUDIO AW head to the power supply unit



Ensure the power supply unit is correctly attached, as shown in Figure 6-3.

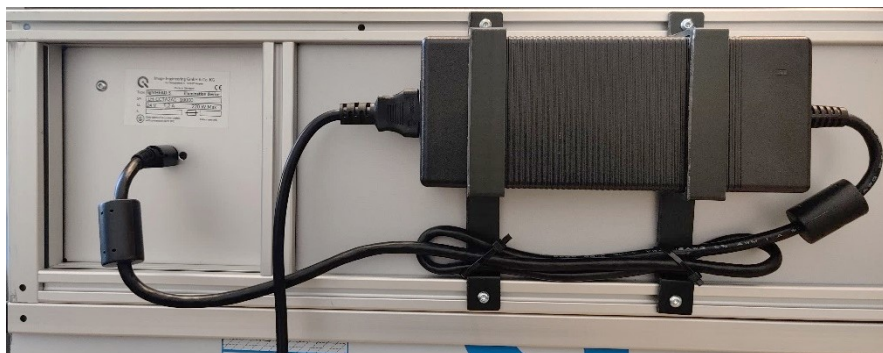


Figure 6-4 - Fastening the power supply unit



6.2 Commissioning

Commissioning via the control panel:

Commissioning by the software:

Install the software on your PC

After installing the device per section **6.1 - Installation**, the corresponding lightSTUDIO AW Head variant can be controlled via software.

Please refer to **Chapter 8** for information on using the software.



7 Operating and display elements

7.1 Control elements on the control panel

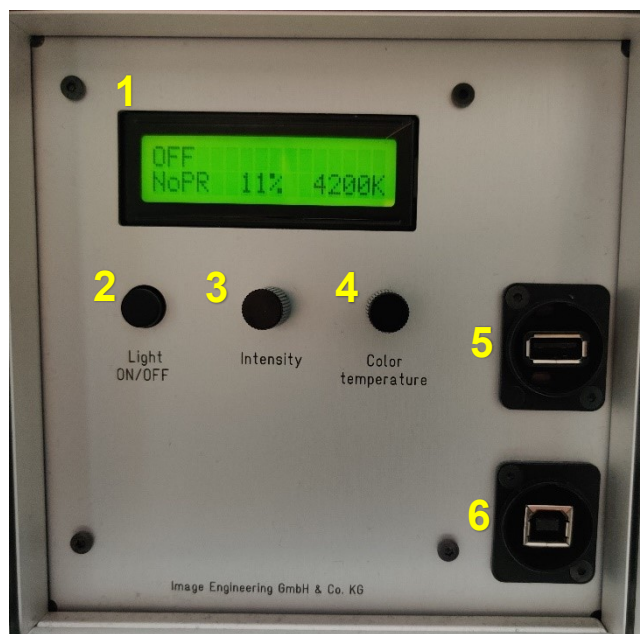


Figure 7-1 - Control panel of the lightSTUDIO AW head

Figure 7-1 shows the control panel of the lightSTUDIO AW Head. The control panel is the same for all lightSTUDIO AW Head variants and consists of 6 elements:

1. LCD display: All important information is displayed here, such as whether the lighting is on or off, the intensity setting, the set color temperature, etc. The color temperature is shown in Kelvin units.
2. Light ON/OFF: This button switches the lighting on or off. When pressed for more than 5 seconds:
 - a. The user can adjust the intensity of the LCD display.
 - b. Information such as operating hours, error description, firmware version, or the device's serial number can be displayed.
3. Intensity: This rotary control is used to set the illumination intensity. If it is pressed for more than 1 second, the user can select a saved preset.
4. Color temperature: This rotary control is used to set the color temperature. If pressed for more than 1 second, the user can replace an old



preset with a new one. The saved values are those currently set on the device. It is not possible to change the preset name here.

5. USB interface used for development purposes. Do not connect a cable to this connector.
6. USB interface for controlling the device via the software.



8 lightSTUDIO Software V2.7.0

8.1 Introduction

The lightSTUDIO software V2.7.0 is a Windows software developed to control the lightSTUDIO in conjunction with the AW (Adaptive White) technology. The graphical user interface provides a complete overview of all components simultaneously and allows quick access to create an intuitive workflow with the lightSTUDIO AW.

8.2 Minimum requirements

- Windows 10 with 64-bit
- USB 2.0 or higher

8.3 Software Installation

The control software for lightSTUDIO is available in 64-bit. The drivers and additional software are installed during the installation. Together with the lightSTUDIO software, the installation includes the following:

- Microsoft Visual C++ redistributable package
- .Net Framework
- Java Runtime
- Hardware driver

8.4 Software Use

First start

Ensure the corresponding lightSTUDIO AW Head variant is correctly connected and switched on. Then, start the software.



User interface - Standard Lighthead

Figure 8-1 shows the user interface of the lightSTUDIO software V2.7.0.

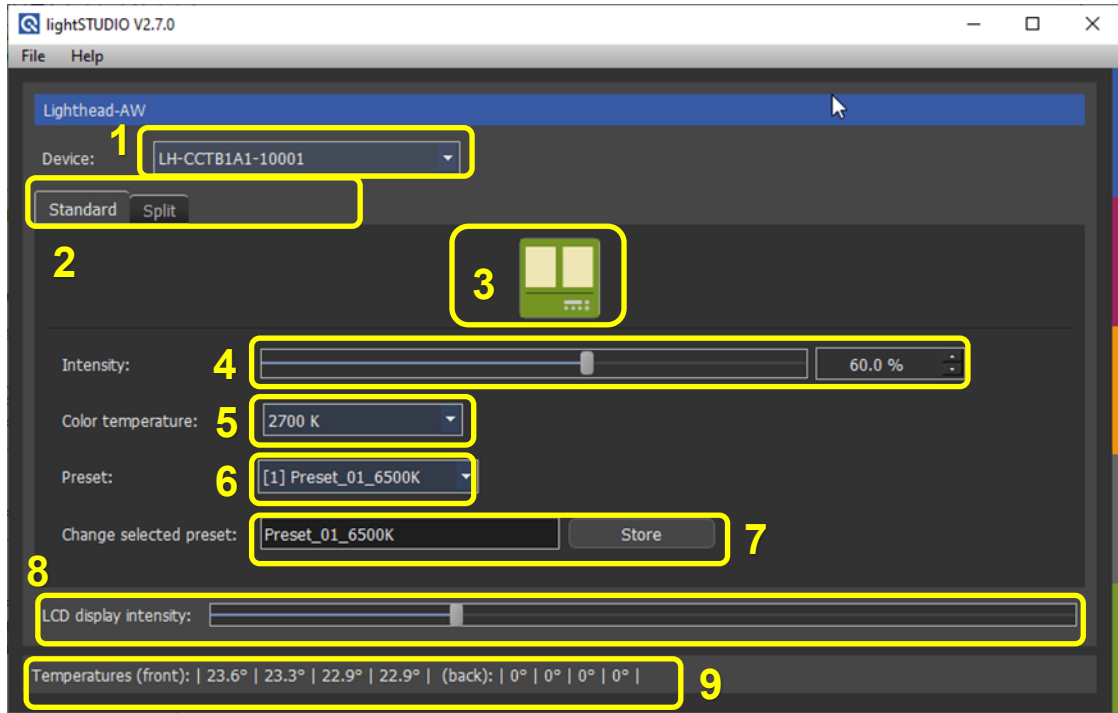


Figure 8-1 - User interface of a standard lightSTUDIO AW Head of the lightSTUDIO V2.7.0 software

The user interface is the same for all lightSTUDIO AW Head versions and consists of 9 software elements:

1. Device ID: All serial numbers of the connected lightSTUDIOS are displayed here. The user can select and control the corresponding device.
2. Standard lighthead/split lighthead: The user can control all LED modules in the system with the standard lighthead. The "Split Lighthead" option can be used to control the split function of the device (see Figure 8-2).
3. The button allows the user to switch the device on/off
4. A control with which the intensity of the device can be adjusted. There is also a field where the user can manually enter the intensity percentage. The increment is 0.1%.



5. A drop-down menu with all adjustable color temperatures. The user can also use the mouse wheel to set the color temperature quickly and easily.
6. A drop-down menu with all stored presets. Users can also set the presets quickly and conveniently using the mouse wheel.
7. The user can use this field to change the name of the preset and save the values for color temperature and intensity. The current preset will be overwritten.
8. A control with which the intensity of the LCD display can be adjusted.
9. A temperature indicator for each LED module in the system.

User interface - Split Lighthouse

The user interface in "Split Lighthouse" mode looks similar to the "Standard Lighthouse" mode (see Figure 8-2). In "Split Lighthouse" mode, the "Split" function of the device is activated and controlled. It is impossible to change a preset's name in this mode.

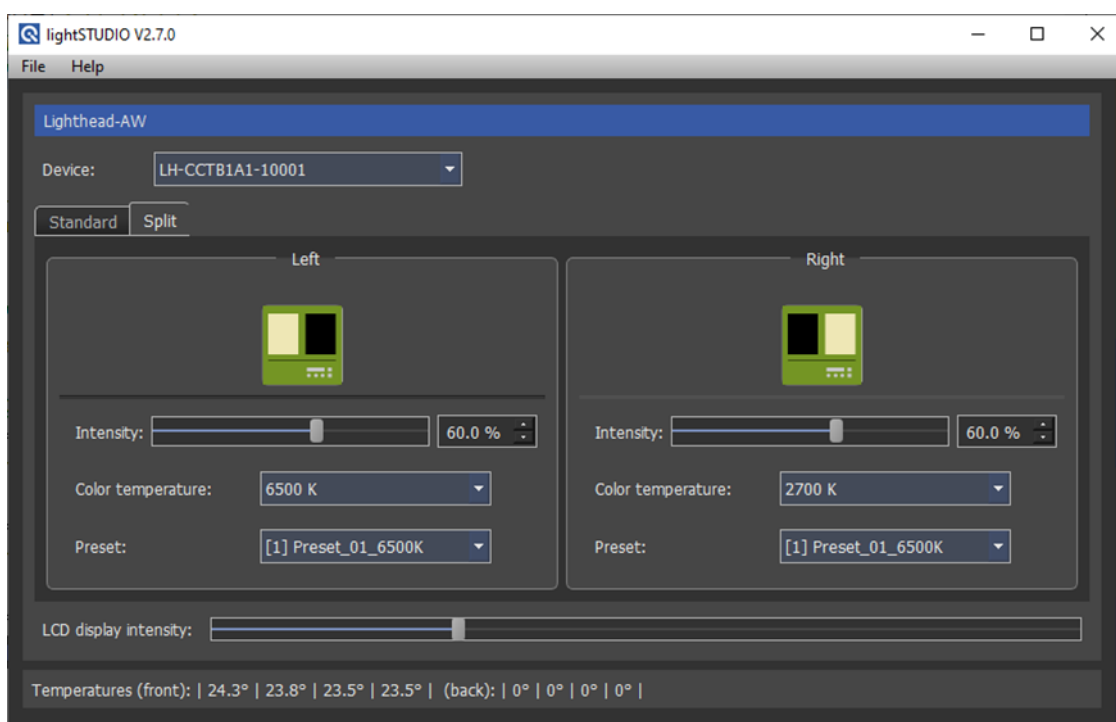


Figure 8-2 - User interface of the Split lightSTUDIO AW Head of the lightSTUDIO software V2.7.0



9 Help with faults

9.1 Procedure in the event of faults or errors

If faults or malfunctions of a lightSTUDIO AW Head variant occur, please contact Image Engineering support immediately.

9.2 Fault and error messages

A table with the possible error messages of the LCD display follows:

Error code	Error description
Error 1	Short circuit LED module A
Error 2	Short circuit LED module B
Error 3	Short circuit LED module C
Error 4	Short circuit LED module D
Error 5	Temperature sensor A Defective
Error 6	Temperature sensor B Defective
Error 7	Temperature sensor C Defective
Error 8	Temperature sensor D Defective
Error 9	Overheating LED module A
Error 10	Overheating LED module B
Error 11	Overheating LED module C
Error 12	Overheating LED module D
Error 13	LED module A not calibrated
Error 14	LED module B not calibrated
Error 15	LED module C not calibrated
Error 16	LED module D not calibrated
Error 17	LED module A Light intensity too low/high
Error 18	LED module B Light intensity too low/high
Error 19	LED module C Light intensity too low/high
Error 20	LED module D Light intensity too low/high
Error 21	CAN communication with LED series x field-impacted



10 Maintenance and inspection work for operators

10.1 Control

Check daily before starting work and commissioning that the lightSTUDIO AW Head:

1. Is in perfect condition visually.
2. Is stable and standing correctly.
3. The lightSTUDIO AW Mount is securely screwed to the corresponding lightSTUDIO AW Head variant at five points (2x left, 2x right, and 1x front) (see Figure 10-1).

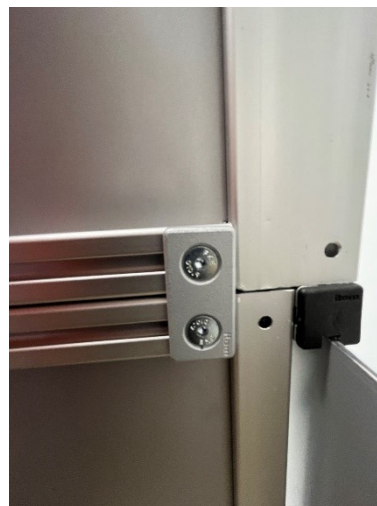


Figure 10- 1 Attaching the lightSTUDIO AW head with the mount



10.2 Care

If the lightSTUDIO AW Head is dirty, clean it with a dry cloth.



11 Maintenance work

All lightSTUDIO AW Head versions are maintenance-free.

For disposal of the appliance, see **Chapter 12**.



12 Disposal and recycling

The corresponding lightSTUDIO AW Head variant must be disposed of properly at the end of its service life. The device must not be disposed of with household waste.



If you have a lightSTUDIO AW Head variant, please return it to Image Engineering.

If you need assistance with the shipment or want a return slip, please contact one of Image Engineering's service addresses.



13 Technical data



lightSTUDIO AW Head

Name	lightSTUDIO AW Head
Function	lightSTUDIO AW Head is a diffuse light head that allows for the selection of different correlated color temperatures (CCT) and illuminance adjustment. The CCT describes the relative color temperature of a white light source and enables the light spectrum to be adjusted for different applications or visual requirements.
Features	Adjustable color temperature Adjustable illuminance

lightSTUDIO 1AW90 Head

Light intensity*	2 lx – 1800 lx
Adjustable Color Temperature**	3000 Kelvin – 6500 Kelvin
Accessible color temperatures	3000K, 3200K, 3400K, 3600K, 3800K, 4000K, 4200K, 4400K, 4600K, 4800K, 5000K, 5200K, 5400K, 5500K, 5600K, 5800K, 6000K, 6200K, 6500K
CRI	> 90

lightSTUDIO 2AW90 Head

Light intensity*	4 lx – 3600 lx
Adjustable Color Temperature**	3000 Kelvin – 6500 Kelvin
Accessible color temperatures	3000K, 3200K, 3400K, 3600K, 3800K, 4000K, 4200K, 4400K, 4600K, 4800K, 5000K, 5200K, 5400K, 5500K, 5600K, 5800K, 6000K, 6200K, 6500K
CRI	> 90



lightSTUDIO 1AW95 Head

Light intensity*	1.5 lx – 1700 lx
Adjustable Color Temperature**	2700 Kelvin – 6500 Kelvin
Accessible color temperatures	2700K, 2800K, 3000K, 3200K, 3400K, 3600K, 3800K, 4000K, 4200K, 4400K, 4600K, 4800K, 5000K, 5200K, 5400K, 5500K, 5600K, 5800K, 6000K, 6200K, 6500K
CRI	>= 95

lightSTUDIO 2AW95 Head

Light intensity*	3 lx – 3400 lx
Adjustable Color Temperature**	2700 Kelvin – 6500 Kelvin
Accessible color temperatures	2700K, 2800K, 3000K, 3200K, 3400K, 3600K, 3800K, 4000K, 4200K, 4400K, 4600K, 4800K, 5000K, 5200K, 5400K, 5500K, 5600K, 5800K, 6000K, 6200K, 6500K
CRI	>= 95

Software

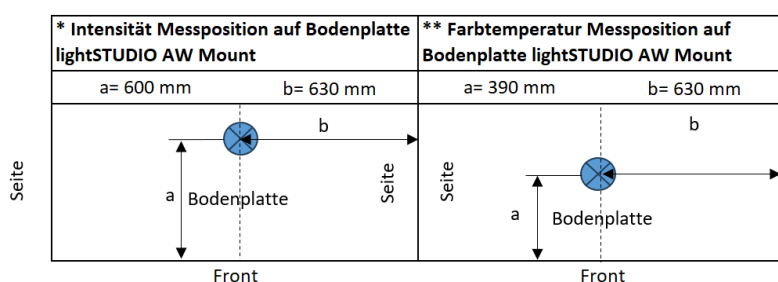
Requirements	PC with Windows 10 (or higher) USB 2.0 Port
Functionality	<ul style="list-style-type: none">Adjustable Color Temperature (in K)Adjustable Light intensity (in %)Split functionPreset-controlled lighting control
Software	lightSTUDIO Software

For all lightSTUDIO AW Head Variants

Illuminated area (L x W x H)	1250 mm x 750 mm
Response time to changes in illuminance / color temperature	<ul style="list-style-type: none">Manual control via device's control panel: < 5 msRemote control from PC: < 120 ms
Stabilization time after changing the illuminance / color temperature	<ul style="list-style-type: none">Stabilization time of <1.8 seconds per 1% intensity change.Stabilization time is 0 seconds for a change in color temperature.
Operation without PC	<ul style="list-style-type: none">Storage of up to 25 predefined presetsControllable with switches on the appliance panel
Light source	Image Engineering AW Light Source Technology (AW for Adaptive White)
Homogeneity	> 70%
Dimming function for illuminance	Coarse tuning from 0 - 100% in 1% increments, Fine-tuning with 0.1% steps
Other features	Warm-up, preset-controlled light control, display backlighting controllable via firmware



Lifespan	12.000 Hours
Power supply/consumption	24 VDC, 221 W - External power supply unit (not part of this product) ***
Connectors	1 x USB for software control
Dimensions (depth x width x height)	1380 mm x 805 mm x 180 mm
Weight of device	<ul style="list-style-type: none"> lightSTUDIO AW 1AW90 / 1AW95 → 38 Kg lightSTUDIO AW 2AW90 / 2AW95 → 44 Kg
Operating temperature	19° - 25 °C
Scope of delivery	<ul style="list-style-type: none"> lightSTUDIO AW User Manual lightSTUDIO AW HEAD Power cable + USB-Kabel lightSTUDIO AW – Acceptance protocol lightSTUDIO Software Wooden box
Illumination levels	Illuminance deviation*
100%-1%	+/- 5%
0,9% - 0,5%	+/- 10%
< 0,5%	> +10% / < -10%
Illumination levels	Color temperature deviation**
100%-2%	+/- 1,5%
1,9% - 1%	+/- 4%
0,9% - 0,5%	+/- 10%
< 0,5%	> +10% / < -10%



* Intensity measuring device	Tolerance	** Color temperature measuring device	Tolerance
PRC Krochmann RadioLux 111	+/-1%	Konica Minolta CL500A	+/-1%

*** Reference power supply unit: Meanwell GSM220A24-R7B - IN: 100 - 240VAC; OUT: 24 VDC, 9.2A, 221W; Connector KYCON KPPX-4P



14 Appendix

14.1 Service addresses

For support requests, please contact us directly:
support@image-engineering.de

Europe

Image Engineering GmbH & Co KG
Im Gleisdreieck 5
50169 Kerpen

Mon-Fri: 9:00 a.m. to 5 p.m. (CET)

Tel: +49 2273 99 99 1-0

Email: info@image-engineering.de

USA

Image Engineering USA, Inc.
3079 Harrison Avenue, Suite 6
South Lake Tahoe, CA 96150

Mon-Fri: 8 a.m. to 6 p.m. (CT)

Phone: +1 408 386 1496

Email: sales@image-engineering.us

China

Shenzhen Image Engineering Optoelectronic Equipment Co, Ltd (IE China Subsidiary)

深圳艾宜光电设备有限公司 (IE中国全资子公司)

Room 1508, Chengshi Shanhai Pingji Center,
Pingxin North Road No.51, Pinghu Street,
Longgang District, Shenzhen City, China

深圳市龙岗区平湖街道平新北路51号城市山海平吉中心15楼1508室

Mon-Fri: 9 a.m. to 6 p.m. (CST)

中国子公司工作时间: 每周一至周五 上午9点-下午6点

Phone

+86 158 8961 9096

Email: leon.xiao@image-engineering.com



14.2 Spare and wear parts

The lightSTUDIO AW Head variants have no wearing parts.



14.3 Declaration of conformity



EG-Konformitätserklärung

Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller

Image Engineering GmbH & Co. KG
Im Gleisdreieck 5
DE - 50169 Kerpen

Beschreibung und Identifizierung des Produkts

Produkt / Erzeugnis	Illumination Devices lightSTUDIO 1AW90 Head / 1AW95 Head / 2AW90 Head / 2AW95 Head
Artikelnummer	100200513 / 100200515 / 100200514 / 100200516

Es wird ausdrücklich erklärt, dass das Gerät allen einschlägigen Bestimmungen der folgenden EG-Richtlinien bzw. Verordnungen entspricht:

2014/30/EU	Richtlinie 2014/30/EU des Europäischen Parlaments und des Rates vom 26. Februar 2014 zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die elektromagnetische Verträglichkeit (Neufassung)
2011/65/EU	Richtlinie 2011/65/EU des Europäischen Parlaments und des Rates vom 8. Juni 2011 zur Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten

Angewandte harmonisierte Normen:

Norm	
EN 55011 cl. A:2016 + A1:2017 + A11:2020	Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement
EN 61000-3-2:2014	Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current \leq 16 A per phase)
EN 61000-3-3:2013	Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public lowvoltage supply systems, for equipment with rated current \leq 16 A per phase and not subject to conditional connection

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Konformitätserklärung lightSTUDIO 1AW90 Head / 1AW95 Head / 2AW90 Head / 2AW95 Head Seite 1/2



EN 61000-6-2:2005	Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity standard for industrial environments.
EN 61000-6-4:2007 + A1:2011	Electromagnetic compatibility (EMC) – Part 6-4: Generic standards – Emission standard for industrial environments
EN 61326-1:2013	Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements; Table 1: General Test requirements, Table 2: Industrial environment.

Kerpen-Horrem, 15.03.2024

Dietmar Wüller, CEO



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