

# Operating Instructions



DEB1200D ELECTRONIC BALLAST  
DLH1200D DAYLIGHT FIXTURE

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## 1) IMPORTANT INFORMATION

Read all of the following information carefully before operating the Dedolight DEB1200D electronic ballast and DLH1200D daylight fixture.

This document contains important information regarding safety, operation and maintenance of this system.

This equipment is intended for professional use and is to be used by trained personnel only.

Keep the operating instructions with the equipment at all times.  
The manufacturer is not responsible for damage caused by improper use or mishandling.

The DEB1200D electronic ballast and the DLH1200D light head are built in accordance with CE and EMV-regulations EN 55015, EN 61547, EN61000-3-2 and -3, safety standards EN 60598-1, EN 60598-2-17, EN 60922, EN60350.

## 2) GENERAL DESCRIPTION OF THE SYSTEM

The compact DEB1200D electronic ballast is intended exclusively for use with the Dedolight DLH1200D daylight light head.

The DEB1200D electronic ballast is equipped with active power factor correction. The light head is to be used with a 800W daylight lamp which provides the highest possible color rendition index RA > 92, and a color temperature of approximately 5600K.

The Dedolight DEB1200D electronic ballast offers the capability of dimming the lamp, boosting the lamp or operating it with nominal power.

Further advantages of this electronic ballast in comparison to conventional ballasts for daylight lamps:

- flicker free up to 10,000 frames/second\*
  - no camera synchronization necessary
  - stable optimal color quality
  - flicker factor < 2% rest ripple
  - stable color temperature
  - wide range of input voltages from 90-264V AC
  - fluctuations of input voltage and input voltage frequency within the above-mentioned limits have no influence on the emitted light
  - over voltage cut off
  - automatic fuse in the mains switch
  - active power factor correction
- \* except high speed video cameras with „rolling shutter“ for example Phantom HD

The lamp is driven with a square wave AC voltage of approximately 75 cycles in flickerfree mode. Lamp output is regulated according to preadjusted value independent of mains and lamp voltage. Lamp amperage is regulated, further contributing to flawless operation.

The power electronics are monitored by a temperature control circuit. Should cooling be insufficient or in case of fan failure, the electronic ballast will switch the lamp off. The ignitor is placed in a housing beside the lighting fixture and generates the ignition voltage necessary to start the lamp.

Push buttons on the ignitor housing and/or identical push buttons on the electronic ballast allow the start and stop of operation on the ballast or on the fixture. Independent from the settings on the electronic ballast, the focusing knob on the light fixture allows the variation of the beam angle in an extremely wide range. Using a patented two lens system in combination with a 2-step movement of the mirror and lenses, it is possible to achieve a focusing range unprecedented in other compact light heads.

The finely tuned optical system offers an extremely clean beam - with practically no stray light - improved light distribution in spot and flood and any position in between. The adjustability of the beam has been enhanced by a super spot position.

The holders on the front ring of the fixture accept accessories such as the barndoor, filter holder or projection attachment which are secured by a latch on the top left side of the fixture.

A handle on the rear side of the fixture, which can be unfolded for operation or folded for transport, allows for easy pan and tilt motions of the light head.

A metal noose on the right side of the light head can accept a suitable safety cable or safety chain to connect the light head with its point of fixation when operated in a hanging mode. If needed, the same noose can be used for a safety cable to secure the barndoor.

### 3) SAFETY PRECAUTIONS

The DLH1200D daylight light head cannot be operated without the DEB1200D electronic ballast. The connecting cable (DPOW1200D) must be used between the electronic ballast and the light fixture. **Maximum tilt angle is +/- 90°.**

**Upside down operation of the light head is not allowed and will damage the ignitor.**

#### A) CAUTION: MAINS VOLTAGE!

This system is built according to Safety Class 1 which requires a grounded 3-pin connection (L, N, PE). Before connecting the ballast to the mains, be sure the outlet meets safety regulations. If the ground connection carries any voltage, the outlet should not be used under any circumstance. If the ground connection is missing, a suitable grounded outlet must be found.

Care should be taken to ensure that the mains connector and mains cable are of a

suitable dimension (gauge) to meet the prevailing rules in each individual country.  
The electronic ballast works with all voltages from 90-264 V AC.

## **B) DISTANCE TO FLAMMABLE MATERIAL**

The light head must never be operated near flammable material.  
Minimum distance to flammable material in direction of the emitted light: 3m (10 ft).  
Minimum distance of the light head housing to flammable material: 0,8m (2,8ft).  
The system must not be switched on or used in aggressive or explosive media.

**Caution: Do not put light into transport case while still hot !!**

## **C) OUTDOOR OPERATION**

The DEB1200D electronic ballast and DLH1200D light head are built according to Safety Class IP23 (wet location).

The light head cable and connectors are in accordance with IP67 and can be laid on wet ground provided correct seating of the connector lock rings is assured.

## **D) UV RISK**

The lamp used in the light head emits high UV values which present a health hazard if proper protection is not ensured.

Do not operate the system if:

- the door of the fixture is open
- there is no front lens in the light head
- the front lens is without UV cut filter
- there is no mirror inside the light head
- internal protective shields are missing or damaged

## E) COOLING

### DEB1200D ELECTRONIC BALLAST:

The sides of the housing of the electronic ballast are built as cooling elements. Cooling ribs must not be covered or obstructed in any way. The back plate serves as air intake and must not be covered or obstructed. The air outlets on the side vents must allow unhindered exit of warm air.

The electronic ballast must not be operated on humid or wet surfaces.

Avoid direct sunlight on the DEB1200D.

### DLH1200D DAYLIGHT FIXTURE:

To prevent the possibility of fire, the DLH1200D light head must be mounted on a light hanger suitable for the load or on a lighting stand of suitable dimension to prevent the light head from falling or tipping over.

Do not cover the air intake or air exit openings or place any object on top of the light head.

## F) REPAIR AND MAINTENANCE

Repair, maintenance and adjustments are only to be conducted by Dedotec's repair department or qualified service personnel. Only manufacturers original replacement parts are to be used.

### **Mains input and output of the electronic ballast are not isolated.**

Extreme care must be taken when taking measurements on the ballast or light head with power applied.

**No grounded measuring instruments should be used and all relevant safety precautions must be observed. The ignitor produces dangerously high voltages up to 30KV!**

**Disconnect head from ballast before performing the following inspection.**

The high voltage cables (between the ignitor and the socket) and the sockets themselves must be visually inspected at least once a year (view through opened door of the fixture). Even if only minor mechanical damage has occurred, these components must be replaced.

Every 100 hours of operation, the lamp must be checked. Damaged or deformed lamps must be replaced to minimize the risk of exploding lamps.

Before each operation of the system, the condition of the front lens must be checked. A broken front lens must only be replaced by an original front lens with UV cut filter (recognizable by a purple coloration when looked at from an angle).

## G) ADDITIONAL PRECAUTIONS

- Switch equipment off when not in use
- Don't carry the equipment by its power cable
- Don't squeeze cables underneath doors
- Don't place cables over sharp objects
- In case of malfunction, disconnect ballast from mains (don't pull on the cable)
- Do not allow children to operate the ballast
- Make sure that damaged equipment is rendered inoperable and properly disposed of or sent to the manufacturer for repairs

## 4) POWER FACTOR CORRECTION (PFC)

The built-in active power factor correction (PFC) reduces the idle power (reactive power) in the electronic ballast and regulates automatically to  $\text{Cos}^{\Phi}$  (cosinus Phi) 0.98. Because of this, the current consumption is reduced by approximately 30 - 35% in comparison with traditional ballasts.

An additional advantage is the continuous range of input voltage from 90 - 264 AC.

## 5) INSTALLING LAMPS

**A)** Put red mains switch on ballast to off position "O".  
Disconnect ballast from mains.

**B)** After switching off the light fixture, allow the lamp to totally cool before attempting to change the lamp. Wait at least fifteen minutes to minimize the danger of an exploding lamp. Open the door of the fixture with the two black sliding latches on left side while pulling the additional locking knob on rear side.

**CAUTION: The lamp may still be very hot.  
Use heat insulated gloves.**

**C) Use only the following lamps:**

Use of original Dedolight lamps is recommended: type **HMI800HR-SE**.

This lamp matches perfectly the intricate design of the Dedolight optics.

Using the original Dedolight HMI800HR-SE lamp from Osram offers optimal results throughout the entire focusing range.

In case of emergency other 800 W single-ended hot-restrike lamps can be used, such as: BA800 SE/HR, CSR800W-SE/HR

**D)** When installing a new lamp, do not touch the glass envelope of the lamp with bare fingers. Oil and grease residue burn into the quartz housing and lower the life expectancy. Remove the foam or plastic safety cover of the lamp only after placing it in the socket or touch lamp only with a lint-free cloth. If the glass housing is dirty, it may be cleaned off with a soft cloth and pure alcohol. Make sure that the lamp is seated all the way down in the socket and the knurled fixing screw on the rear side of socket is closed.

Follow precautions as described in 3F.

After the door has been closed, the black latches must engage audibly.

**Average lifetime of the 800W metal halogen lamp is about 700 hours. This refers to a cycle of three hours on and one hour off.**

**Frequent on/off switching, dimming or use in boost “☉” position shortens lamp life.**

**The probability of an explosion of the lamp is very low. However, if the average lifetime is exceeded by more than 25%, the risk of a lamp explosion noticeably increases.**

## **6) STAND FITTING**

Both stands with 5/8" (16mm) stud and 1 1/8" (28mm) receptacle can be used with the dedolight Series 1200.

The 1200D lighthouse comes prepared for use with a stand with a 5/8" stud. In order to use the stand with the 1 1/8" (28mm) receptacle, the holding screw (A) is removed and parked in a thread on the yoke (B). See drawing on the bottom of page 13.



## 7) STARTING OPERATION OF THE SYSTEM

### A) Local mode

Check to make sure that red mains switch is in off position "O".

- Connect light head (with lamp installed) to ballast with 7m connecting cable.
- Connectors are to be secured by the locking rings.
- Connect ballast with mains cable to a suitable outlet (as described in 3A).
- Switch mode selector 2 to „local“
- Switch ballast on (mains switch). Presence of power is indicated by light in the switch. Ballast is now in ready state.
- If the system is correctly connected and the door of the light head is closed, the "ready" indicator lights on the ballast and on the light head are illuminated green.
- The lamp can be ignited using the green push button (start) on the ballast or on the lighthouse.
- Once the lamp has been ignited, the control indicator (lamp) begins blinking.
- The run up phase of a metal halogen lamp to full brightness can last up to three minutes. This is indicated by blinking of the control indicator. At reached working temperature of Lamp the control indicator lights up continuously.
- Switch the lamp off by pushing red push button (stop) on the ballast or on the light head.

### B) Automatic mode

With the mode selector switch in „AUTOPOSITION“ the lamp will ignite by switching on the mains switch.

Switch the lamp off by pushing the red push button (STOP) on the ballast or on the Lighthouse. The Lamp can be reignited using the green push button (START) on the ballast or on the light head.

### CAUTION:

**Lamp will ignite automatically when connecting mains cable to outlet while mains switch is in „ON“ position. Switching off the metal halogen lamp during the run up time, shortens bulb life. This also causes a dark deposit on the inside of the lamp envelope and ignition will be more difficult or even impossible.**

- When the electronic ballast is in ready mode, the lamp can be reignited in hot state.
- To conclude operation, switch ballast off on mains switch.

**C) DMX mode**

- Check to make sure that red mains switch is in off position „O“
- Connect light head (with lamp installed) to ballast with 7m connecting cable.
- Connectors are to be secured by the locking rings
- Connect external DMX controller to „DMX IN“ terminal on rear side of DEB1200D
- Connect ballast with mains cable to a suitable outlet (as described in 3A)
- Switch ballast on (mains switch). Presence of power is indicated by light in the switch. Ballast is now in ready state.
- Set the DMX address by pushing the yellow push buttons „↓“ and „↑“ simultaneously, until the display starts blinking and release buttons.
- Now select channel with „↓“ or „↑“ buttons. The selected channel is for dimming 50%-135%. The next following channel is automatically selected for the ON/OFF feature.

Auto store of channel after 10 sec.

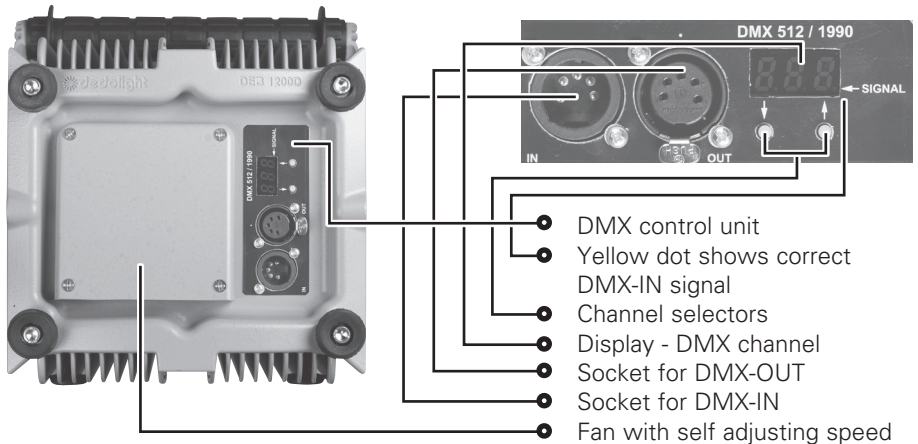
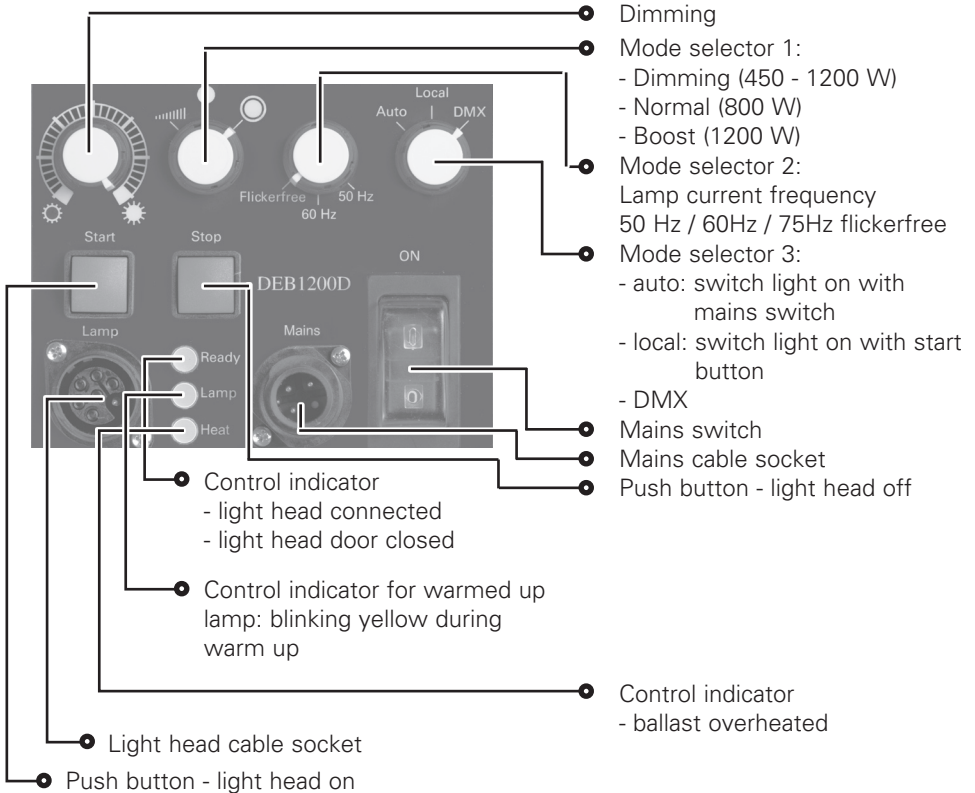
A yellow dot in display corner shows a correct DMX signal from external controller.

**CAUTION:**

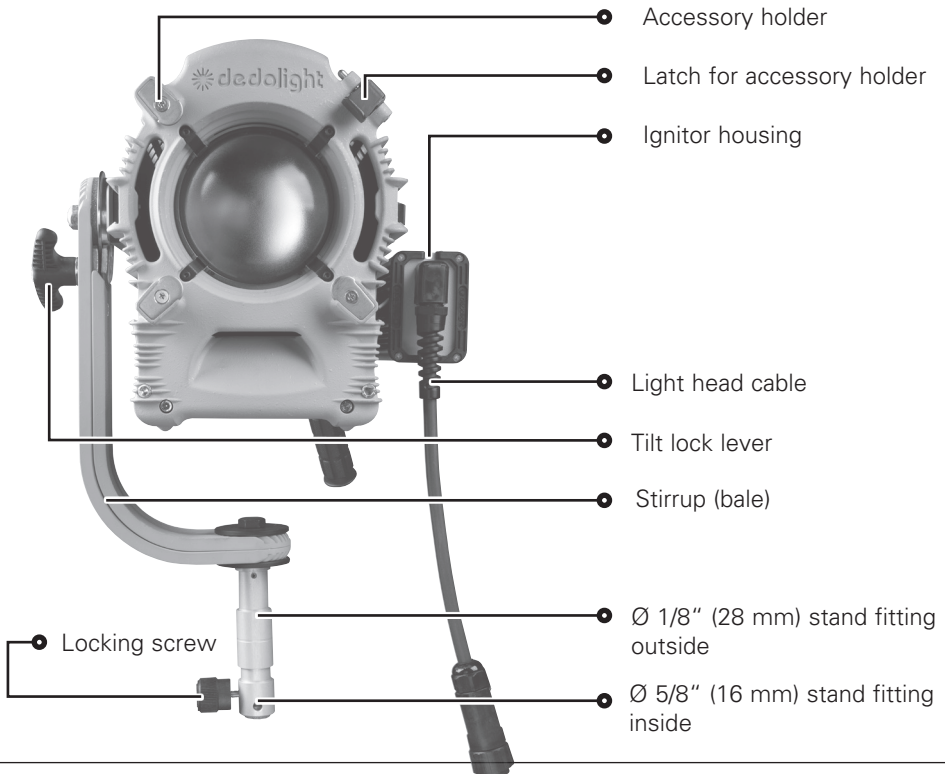
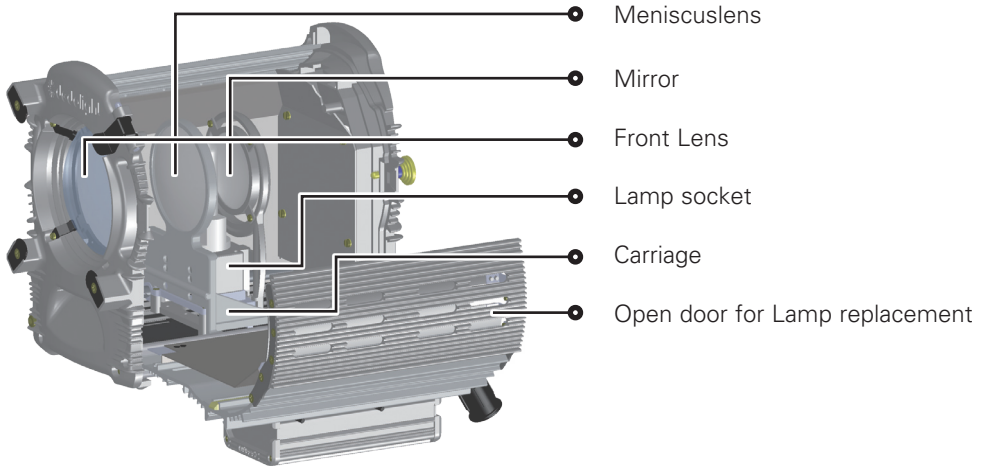
**DMX out terminal requires NO terminating resistor.**

**DMX out signal is switched to a internal resistor if no output DMX cable is connected.**

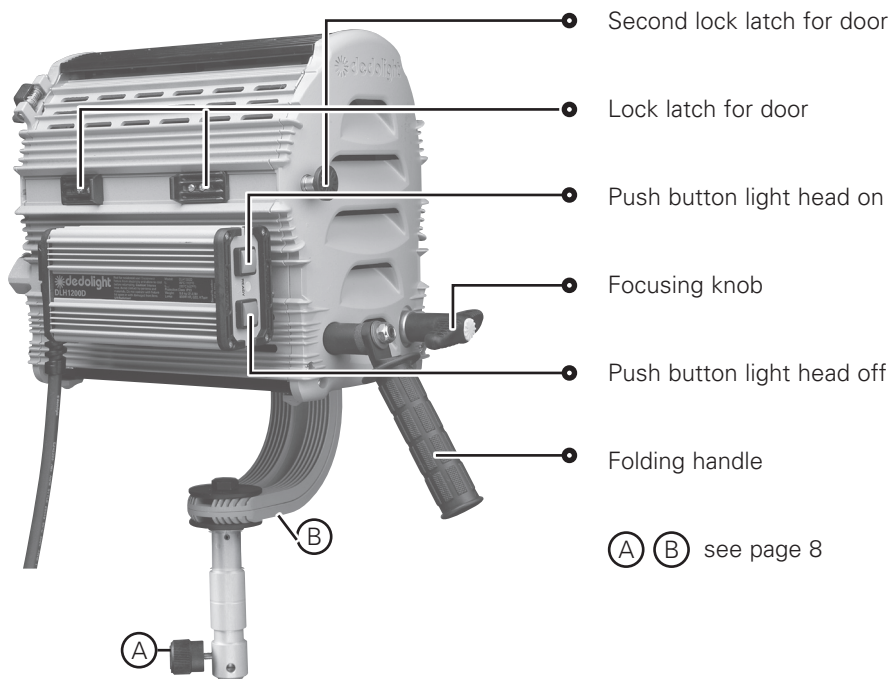
## 8. OPERATIONAL ELEMENTS - DEB1200D



## 8. OPERATIONAL ELEMENTS - DLH1200D



## 8. OPERATIONAL ELEMENTS - DLH1200D



## 9) ADJUSTING THE LIGHT INTENSITY

Advantages of the 800W metal halogen lamp:

- drive in boost position (1200W)
- drive in nominal position (800W)
- drive in dim position (400-1200W)

### **Boost Position** (135%)

The DEB1200D electronic ballast may be set to the boost position “☉” by the yellow three position switch mode selector 1. This pushes the lamp from 800W to 1200W. Even with increased intensity, the color temperature stays practically constant.

The lamp can be used continuously in boost position “☉” but lamp life will decrease.

### **Nominal Power** (100%)

The optimum operating mode of a metal halogen lamp is at nominal output, i.e., switch position “●” (mode selector 1).

The metal halogen lamp is regulated to a constant power of 800W which meets lamp manufacturers’ recommendation.

### **Dimming** (50-135%)

Dimming is possible with the yellow three position switch set to dimming position “|||” (mode selector 1).

When in dimming position, the light intensity can be regulated on the left knob “☼” from 450 - 1200W.

When dimmed electronically, the lamp is not in an optimum operational state. Operating in dimming position will not lengthen lamp life.

## 10) ADJUSTING THE SILENT MODE

The optimum operating mode of the system is in „flickerfree“ Position (mode selector 2) The Lamp is driven with 75Hz square wave.

It is possible to adjust to „50Hz“, „60Hz“ (mode sector 2) if you have a „singing Lamp“.

The System will create less noise but have a higher flicker factor of emitted light. In 50 or 60 cycle mode flicker can only be avoided with cameras operating at recommended frame rates and shutter angle (opening).

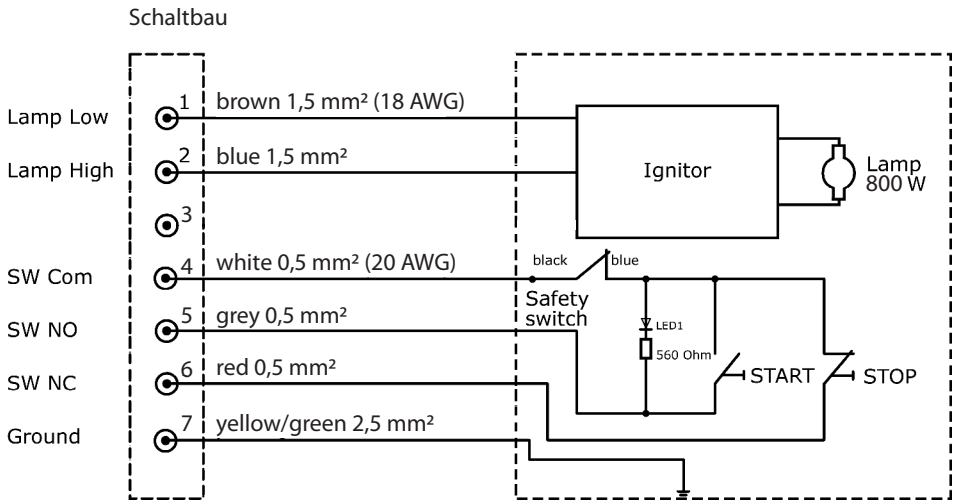
## 11) TRANSPORT

The metal halogen lamps are delivered in a foam protector within a cardboard carton. This material was chosen in order to minimize damage from strong vibration. The lamp should not be removed from the light head before transport.

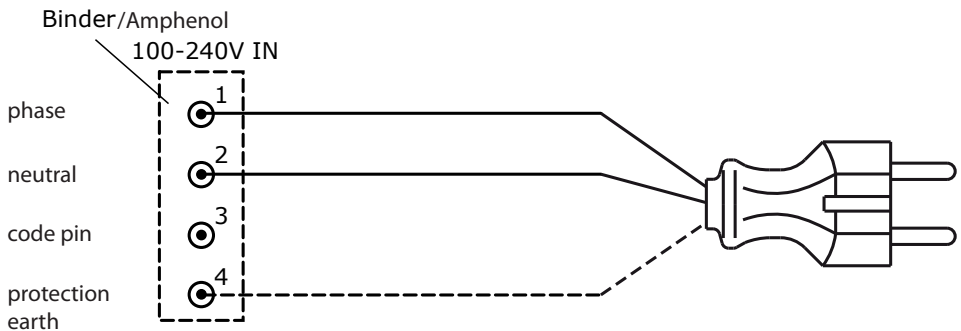
**Caution:**

**Lamp must be fully seated in the lamp socket and knurled fixing screw closed.  
Do not operate fixture without lamp or with improperly installed lamp.  
Failure to follow these instructions may cause damage to lamp & socket which is not covered under warranty.**

## 12) CONNECTION DIAGRAM: BALLAST AND THE LIGHT HEAD CABLE



## 13) CONNECTION MAINS CABLE





## 14) TECHNICAL DATA (SPECIFICATIONS)

### **General:**

Manufacturer:	DEDOTEC optronische und mechanische Systeme GmbH
Model/Type:	DEB1200D (ballast); DLH1200D (light head)
Lamps:	HMI800W-SE7HR, BA800W-SE/HR, CSR800W-SE
Standards:	EN 55015, EN 61547, EN 61000-3-2 and -3, EN 60598-1, EN 6598-2-17, EN 60922, EN 60950, CE,
Electrical Safety:	Safety Class 1
Prot.Class:	DEB1200D: IP 23 DLH1200D: IP 23 DPOW1200D: IP 67

### **Weights and Measures:**

Dimensions:	DEB1200D: L = 329mm (12.45"), W = 228mm (9.0"), H = 230mm (9.07") DLH1200D: L = 292mm (11.5"), W = 328mm (12.9"), H = 271mm (10.7") DPOW1200D: L = 7m (23')
Weight:	DEB1200D: 10 kg (22 lb) DLH1200D: 10,5kg (23.2 lb) DPOW1200D: 1,2kg (2.5 lb)

### **Mains connection:**

Input power:	1200 VA (max.)
Input voltage:	115V - 240V AC
Functional range:	90V - 264V AC Over voltage cut-off integrated to mains switch cut out above 265V AC
Current consumption:	5,0A (U = 240V AC); 12,0A (U = 100V AC) at maximum lamp power (1200W)
Mains frequency:	50 cycle / 60 cycle (47 - 65 cycle)
Power factor:	With active power factor correction stabilized to $\cos \varphi$ 0.98
Efficiency:	Typically 0.90 (depending on lamp and mains voltage)
Operational temperature:	5°C to 35 °C (41°F to 95°F), <b>max. 30°C (86°F) at U = 90 - 105 V AC</b>
Storage temperature:	-20°C to 80°C (-4 °F to 176 °F)

### **Light head:**

Lamp power:	Position 1: Dimming (450 - 1200W) Position 2: Normal (800W) +/- 5% Position 3: Boost (1200W) +/- 5%
Current:	Square wave current approximately 75 cycle (flickerfree mode)
Regulatory principle:	Power regulation with analog multiplier for lamp voltage range between 60V to 120V. In-rush and short circuit current limited to approximately 15A.
Ignition:	Hot and cold start
Flicker factor:	< 2%
UV-radiation	max. 3 $\mu$ W/lm

## 15) TROUBLE SHOOTING

**A.** If the red indicator in the mains switch doesn't illuminate, the mains outlet or mains cable may be defective.

**B.** If the mains switch can't be switched on:

- mains voltage above 264V
- mains voltage has voltage spikes
- short circuit in the ballast.

**C.** If the "READY" control indicator on the ballast and on the light head doesn't light up, this indicates an interruption of the safety loop.

Possible causes:

- lock rings of cable connectors are not properly closed
- the lighththead door is not closed.

**D.** If the red "HEAT" control indicator lights up, this shows overheating in the ballast ( >85°/185° F).

Possible causes:

- ambient temperature too high
- ballast exposed to direct sunlight
- air intake and/or outlet slit openings on ballast are obstructed
- fan failed or is obstructed by foreign object.
- Solution: Eliminate cause and reactivate ballast after cool down period.

**E.** When pushing the start key and „Lamp“ control indicator and „Ready“ control indicator begins blinking yellow switch equipment OFF and separate it from mains.

Possible causes:

- no lamp installed.
- lamp not seated deep enough in socket
- lamp defective
- ignition, cable, ignitor or socket defective

**F.** Ballast switches off after a few minutes of light head operation.

Possible causes:

- lamp is at end of lifetime
- lamp damaged (i.e. cracks in the glass, blackened envelope, dirty or oxidized contact).
- ambient temperature of ballast is too high
- input voltage fluctuations exceed specified limits

**G.** If light head cable shows sharp bends or damage, broken leads could be the cause of malfunction.

In case of component failure: If none of the above mentioned faults can be detected, the entire system should be sent for repair.

## 16) WARRANTY

Dedotec GmbH warrants to the original purchaser, that this product is free from defects in material and workmanship and agrees to repair or replace, at its option, products which under normal installation and use discloses such defect, provided the product is delivered to Dedotec by the original purchaser, intact, for examination with all transportation charges prepaid along with a dated sales receipt, within one (1) year from the date of purchase from an authorized Dedotec dealer and provided that such examination discloses in the judgment of Dedotec that it is thus defective.

This warranty does not cover any equipment which has been subjected to misuse, abuse, neglect, incorrect wiring, improper installation, lightning or other incidence of excessive voltage or use in violation of instructions furnished by us nor to any equipment which may have been tampered with, altered or repaired by other than Dedotec or its authorized service agencies.

**Dedotec is not responsible or liable for indirect, special, or consequential damages arising out of or in connection with the use or performance of the product or other damages with respect to any economic loss, loss of property, loss of revenues or profit, or costs of removal, installation or reinstallation.**

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