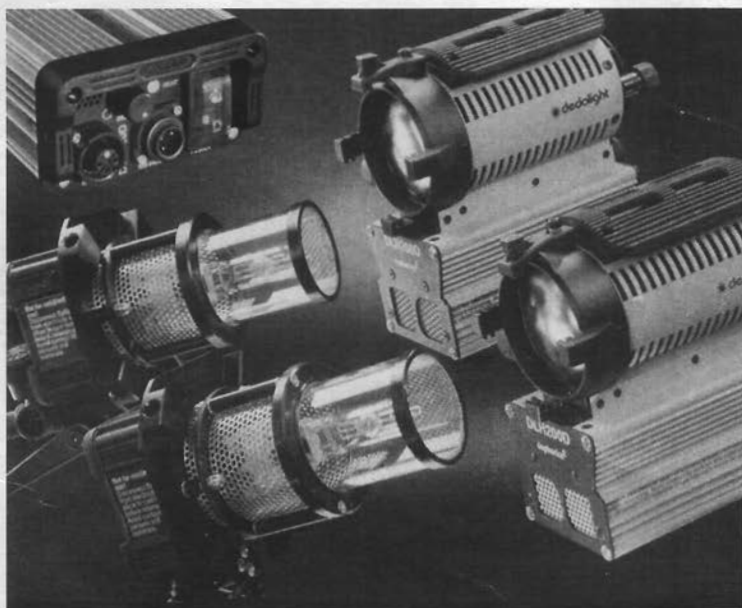


Operating Instructions

 **dedolight**

**DEB200D ELECTRONIC BALLAST  
DLH200D 200W DAYLIGHT FIXTURE  
DLH200S 200W DAYLIGHT SOFT LIGHT**



**CAUTION: LAMP MUST BE FULLY SEATED IN LAMP SOCKET WITH RETAINING SPRINGS ENGAGED. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN DAMAGE TO LAMP & SOCKET, WHICH IS NOT COVERED UNDER WARRANTY**

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## 1. IMPORTANT INFORMATION

Read all of the following information carefully before operating the Dedolight DEB200D electronic ballast, DLH200D and DLH200S 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 DEB200D electronic ballast, DLH200D and DLH200S daylight fixtures are built in accordance with CE and EMV regulations.

### NOTE:

This equipment has been tested and found to comply with the limits for a "class A" digital device pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions provided, may cause harmful interference to radio communications. This equipment also complies with the technical requirements for a class B device.

## 2. GENERAL DESCRIPTION OF THE SYSTEM

The compact DEB200D electronic ballast is intended exclusively for use with the Dedolight DLH200D and DLH200S daylight soft light heads. The DEB200D electronic ballast is equipped with active power factor correction. The light heads are to be used with a Dedolight 200W daylight metal halide lamp which provides the highest possible color rendition index (RA>95) and a color temperature of approximately 6000°K.

The Dedolight DEB200D electronic ballast offers the capability of dimming 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 of emitted light below 3%
- stable color temperature
- wide range of input voltages from 100-240VAC
- fluctuation of input voltage and input frequency within the above mentioned limits has no effect on the emitted light
- over voltage cut off
- automatic fuse in the mains switch
- active power factor correction

The lamp is driven with a square wave AC voltage of approximately 140 cycles. Lamp output is regulated according to pre-adjusted values independent of the mains and lamp voltage. Lamp voltage and lamp amperage are also regulated, further contributing to flawless operation.

A temperature control circuit monitors the power electronics. Should cooling be insufficient or in case of fan failure, the electronic ballast will switch the lamp off.

The igniter is placed in a housing underneath the light fixture. This igniter generates the ignition voltage necessary to start the lamp.

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 3-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 and improved light distribution in spot and flood and any position in between. The adjustability of the beam has been enhanced by a super spot and super flood position.

The holders on the front ring of the fixture accept accessories such as barn doors, filter holder or projection attachments, which are secured by a latch on top of the fixture.

## 3. SAFETY PRECAUTIONS

The DLH200D and DLH200S daylight light heads cannot be operated without the DEB200D electronic ballast. The connecting cable (DPOW200D) must be used between the electronic ballast and the light fixture.

**Maximum tilt angle of the DLH200D is  $\pm 90^\circ$ . Upside down operation of the light head is not allowed and will damage the igniter.**

### 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 AC 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 insure 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 100-240VAC.

### B) DISTANCE TO FLAMMABLE MATERIALS

The light head must never be operated near flammable materials. Minimum distance to flammable materials in direction of the emitted light: 1.5m (5 ft.). Minimum distance of the light head housing to flammable materials: 0.4m (1.4 ft.). The system must not be switched on or used in or near aggressive or explosive media.

### C) OUTDOOR OPERATION

The electronic ballast DEB200D and the daylight fixture DLH200D are built according to Safety Class IP 23 and therefore are suitable for use in wet or high humidity surroundings.

Horizontal tilt of ballast not more than +/- 8° (no upright position).

The light head DLH200S are built according to Safety Class IP 20 and is therefore not suitable for use in wet or high humidity surroundings.

The light head cable and connectors are in accordance with IP 67 and can be laid on wet ground provided correct seating of the connector lock rings is assured.

### D) UV RISK

The lamps used in the DLH200D and DLH200S are manufactured with a glass envelope, which provides UV protection. Do not operate these lights with bulbs other than those supplied by Dedolight. Only use Dedolight Cat. #DL200DHR or DLH200THR lamps.

Do not operate the system if:

- the roof of the fixture is damaged
- the front lens is damaged or missing
- the mirror is damaged or missing
- you are attempting to use non-original Dedolight bulbs

### E) COOLING

#### DEB200D ELECTRONIC BALLAST

The sides of the electronic ballast housing 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.

Avoid direct sunlight on the ballast.

#### DLH200D and DLH200S DAYLIGHT FIXTURES

To prevent the possibility of fire, the light heads must be securely 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 repair department or qualified service personnel. Only Dedolight 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 igniter produces dangerously high voltages up to 25 KV. Disconnect head from ballast before performing the following inspection.**

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

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.

### 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 cable over sharp objects
- In case of malfunction, disconnect ballast from mains (don't pull on the cable)
- Do not allow children to operate the equipment
- Make sure that damaged equipment is rendered inoperable and properly disposed of or sent to the manufacturer for repair

### 4. POWER FACTOR CORRECTION (PFC)

The built-in active power factor correction (PFC) reduces the idle power (reactive power) of the electronic ballast and automatically regulates to  $\cos \varphi$  ( $\cos \Phi$ ) 0.99. Because of this, the current consumption is reduced by approximately 30-35% in comparison to traditional ballasts. On a 120V outlet with a 15A circuit breaker, it is possible to use 7 DEB200D electronic ballasts.

An additional advantage is the continuous range of input voltage from 100 – 240V AC



## 5. INSTALLING LAMPS

**A)** Put red mains switch on ballast in off position "0".  
Disconnect ballast from mains.

**B)** After switching off the light fixture, allow lamp to totally cool before attempting to change lamp.  
Wait at least 15 minutes to minimize the danger of an exploding lamp.

DLH200D:

Open the rear cover of the fixture by loosening the knurled knob and removing the two retaining Screws (flat head). Slide out focussing mechanism and lamp carriage to replace bulb

DLH200S:

Unscrew safety glass tube with heat-insulated gloves!! Replace lamp and screw protective glass tube back in place.

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

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

Dedolight Cat.#**DL200DHR** (Daylight)

Dedolight Cat.#**DL200THR** (Ceramic Tungsten)

These lamps perfectly match the intricate design of the Dedolight optics.

These lamps are constructed with a glass envelope, which offers UV protection. Using original Dedolight lamps offers optimal results throughout the entire focusing range.

**D)** When installing a new lamp, do not touch the glass envelope with bare fingers. Oil and grease residue burn into the quartz housing and lower the life expectancy of the lamp. Remove the foam or plastic safety cover of the lamp only after placing it in the socket. If the glass housing is dirty, it may be cleaned with a soft cloth and pure alcohol.

Make sure the lamp is fully seated in the socket and both holding springs are engaged.  
Follow the precautions as outlined in step 3F.

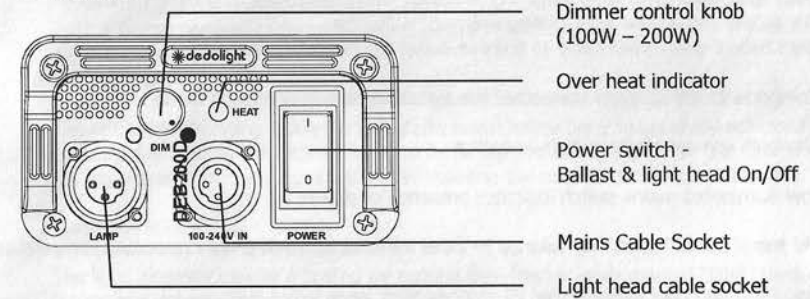
Replace carriage and rear door along with all mounting hardware.

**Average lifetime of the 200W daylight metal halide lamp is approximately 200 hours. This refers to a cycle of three hours on and one hour off.**

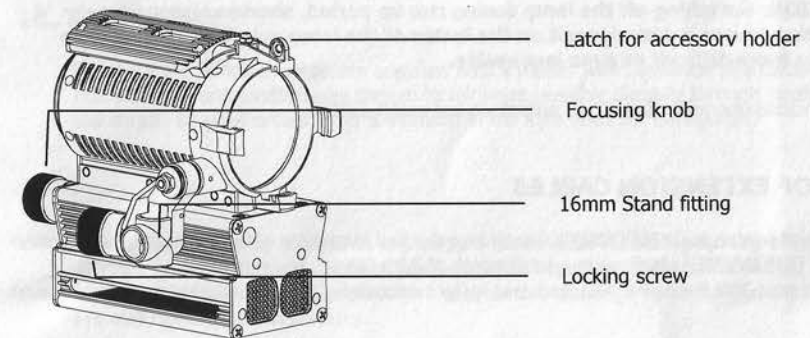
**The probability of a lamp explosion is very low. The risk of lamp explosion noticeably increases when the lamp lifetime is exceeded by more than 25%.**

## 6. OPERATIONAL ELEMENTS

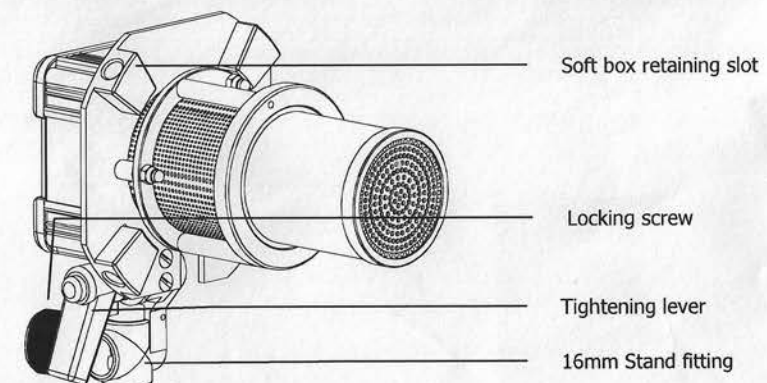
### DEB200D



### DLH200D



### DLH200S



## 7. SYSTEM START UP ROUTINE

- Insure that red mains switch is in "OFF" position
- Connect light head (with lamp installed) to ballast using connecting cable (DPOW200D)
- Secure proper connection with locking rings on connectors
- Connect ballast with mains cable to suitable outlet (as described in 3.A)

If all components are properly connected the system is now in operating mode

To ignite bulb use red mains switch on ballast

The now illuminated mains switch indicates presence of power

Daylight metal halide lamps may take up to three minutes to reach proper operating temperature

Dimming function is not available for 10 seconds after igniting the bulb

The DL200DHR can be reignited without noticeable delay

**CAUTION: Switching off the lamp during run up period, shortens lamp life. This also causes a dark deposit on the inside of the lamp envelope and ignition Will be more difficult or even impossible.**

To conclude operation, switch off ballast via red mains switch.

## 8. USE OF EXTENSION CABLES

The head feeder cable (DPOW200D) may be extended by adding a maximum of two extension cables (DPOW200D) resulting in a total length of 21m (69 ft). Please, note that there will be a decrease in light intensity of 3% per additional extension used.

## 9. ADJUSTING LIGHT INTENSITY

An advantage of the 200W daylight metal halide lamp is the ability to be operated at

- nominal capacity of 200W
- below nominal capacity: dimmed (100 - 200W)

Normal operating mode (100%):

The optimum operating mode for a daylight metal halide lamp is generally achieved at nominal capacity, i.e. turning the dimmer knob to its far right stopping point. In this dimming position the lamp is operated at a constant 200W meeting the manufacturers specifications.

Dimming mode (50% - 100%):

The light intensity can be adjusted by turning the dimmer knob marked "DIM" through its continuous dimming range of 100W - 200W. When dimmed the lamp does not reach its ideal operating temperature. Therefore an increased lifespan cannot be expected.

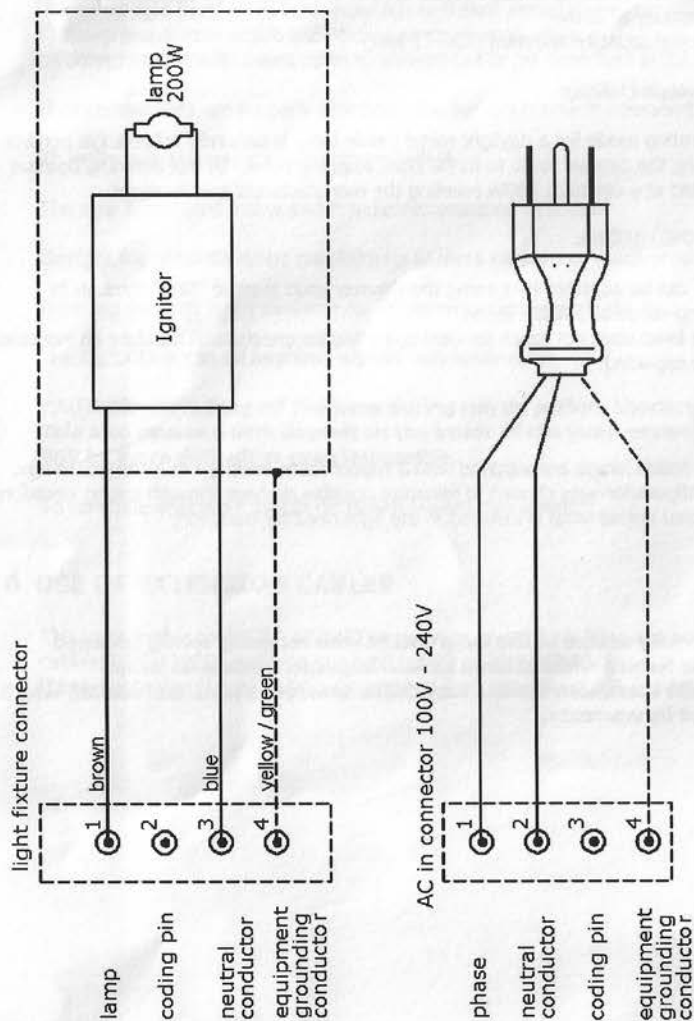
## 10. TRANSPORT

Dedolight metal halide lamps are supplied with a rubber foam envelope in a cardboard box. This packing configuration was chosen to minimize possible damage through strong vibrations and should be used unless lamp is installed in the light head for transport.

### Caution:

**Lamp must be fully seated in the lamp socket with retaining spring engaged. Do not operate fixture without lamp or with improperly installed lamp. Failure to follow these instructions may cause damage to lamp and socket, which are not covered by warranty.**

## 11. TERMINAL LAY OUT OF ELECTRONIC BALLAST AND LIGHT FIXTURE WIRING



## 12. TECHNICAL DATA (SPECIFICATIONS)

### General:

Manufacturer: DEDOTEC optronische und mechanische Systeme GmbH  
 Model/Type: DEB200D (ballast); DLH200D (light head); DLH200S (soft light)  
 Lamps: DL200DHR (Daylight); DL200THR (Ceramic tungsten)  
 Standards: EN 55015, EN 61547, EN 61000-3-2 and -3, EN 60598-1, CE, EN 61598-2-17, EN 61347-2-12, EN 61347-1, EN 61000-4-2,-3,-4,-5,-6,-11, FCC Part 15 (ClassA) according to ANSI C 63.4

Electrical Safety: Safety Class 1  
 Prot. Class: DEB200D: IP 23 (in horizontal operating position)  
 DLH200D: IP 23 (in horizontal operating position)  
 DLH200S: IP 20  
 DPOW200D: IP 67

### Dimensions and Weights:

Dimensions: DEB200D: H = 72mm, L = 238mm, W = 128mm  
 DLH200D: H = 167mm, L = 174mm, W = 131mm  
 DLH200S: H = 158mm, L = 172mm, W = 113mm  
 DPOW200D: L = 7m (23')

Weights: DEB200D: 1,9 kg  
 DLH200D: 1,3 kg  
 DLH200S: 1,5 kg  
 DPOW200D: 0,9 kg

### Mains Connection:

Input Power: 230 VA (max.)  
 Input Voltage: 100 V - 240 V AC / 1 - N - PE  
 Functional Range: 90 V - 264 V AC continuous  
 Over voltage cut-off integrated in mains switch, cut out Above 265 V AC  
 Current Consumption: 0,95 A (U = 240 V AC); 2,3 A (U = 100 V AC)  
 At maximum light out put (200W)  
 Mains Frequency: 50 Hz / 60 Hz (47 - 65 Hz)  
 Power Factor: With active power factor correction stabilized to Cos  $\phi$  0.99  
 Efficiency: Typically 0.86 (depending on lamp and mains voltage)  
 Operational temperature: 5°C to 35°C  
 Storage temperature: - 20°C to 80°C

### Light head:

Lamp power: 100 - 200W, max. 200W +/- 5%  
 Current: Square wave current approximately 140 cycles  
 Regulatory Principle: Power regulation with analogue multiplier for lamp voltage range between 60 V and 100 V;  
 In-rush and short circuit current limited to about 3,5 A  
 Ignition: Hot and cold start, ignition period limited to 3 sec.  
 Light Ripple: < 3% Flicker  
 UV - Radiation: max. 50 $\mu$ W/lm between 200 - 315 nm



### 13. Declaration of Conformity



#### DECLARATION OF CONFORMITY

following the provisions of 73/23/EWG / 93/68/EWG Directive

**Supplier:**

Fa. DEDOTEC GmbH  
Karl-Weinmair-Str. 10  
D-80807 Munich  
Germany

**Model:**

**dedolight DLH200D with DEB200D**

**Product description:**

- high intensity metal halide lighting fixture for stage and studio, with separated electronic ballast  
- compact light head with a dual-lens concept and 200 W H-Type lamp

**Characteristics:**

- input voltage range: 100 V - 240 V AC, 47 - 65 Hz  
- rated current at 230 V AC: 1.0 A  
- max. power consumption: 230 VA  
- power factor  $\cos\phi > 0.99$   
- safety class I, IP 20

**Relates to the following Standards or normative documents:**

EN 55015, EN 60598-1, EN 60598-2-17, EN 60950,  
EN 61000-3-2, EN 61000-3-3, EN 61547,  
EN 61000-4-2/3/4/5/6/11

DEDOTEC GmbH  
Munich, July 2006

DEDOTEC optronische und  
mechanische Systeme GmbH  
Karl-Weinmair-Str. 10  
80807 Munich

### 14. TROUBLE SHOOTING

- A)** If the red indicator in the mains switch doesn't illuminate and the light head does not ignite  
Possible causes:  
- mains cable might not be properly connected  
- mains cable or mains outlet may be defective.
- B)** If the mains switch does not stay in "ON" position  
- mains voltage above 265V  
- voltage spikes in the mains  
- short circuit in the ballast
- C)** If the red "HEAT" control lamp lights up the ballast is over heating  
Possible causes:  
- ambient temperature too high  
- ballast exposed to direct sun light  
- air intake and /or outlet openings obstructed  
- fan failed or is by foreign object  
Solution: Eliminate cause and reactivate ballast after cool down period
- D)** If loud noise is audible from light head when igniting  
Possible causes:  
- no lamp installed  
- lamp not seated properly  
- lamp defective  
- ignition cable or socket defective
- E)** Ballast switches off light head after a few operating minutes  
Possible causes:  
- lamp reached end of life span  
- lamp is not in proper working condition (cracked glass, black deposit on inside of glass envelope, corroded contacts)  
- surrounding temperature of ballast too high  
- current fluctuations outside functional range
- F)** If the cable shows noticeable wear like crushed spots, severe dents or breaks in the Insulation it could be the reason for mal - function.

In case any piece of the system does not function properly and none of the mentioned solutions eliminate the problem, the entire system should be sent in for maintenance and repair.





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