

# PHOS 20

## OPERATING INSTRUCTIONS



derksen®  
lichttechnik

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# OPERATING INSTRUCTIONS

Thank you for deciding to purchase this high quality product. The PHOS 20 projector is produced exclusively in Germany and meets the highest standards of quality and safety. We hope you enjoy many fascinating hours with your new LED projector! To use the device effectively and safely, please read this operating instruction carefully first!



## **Package Contents:**

- LED Projector PHOS 20
- Operating instructions

## **These optional accessories are available:**

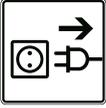
- Glass gobos, custom made according to your specifications

## **WARNING!**

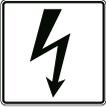
**Read the safety instructions  
before operating the appliance or performing maintenance.**

# SAFETY INSTRUCTIONS

## ELECTRICAL SAFETY



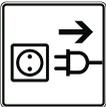
- Only when the power cord is unplugged, the device is volt-free and fully isolated from the mains! Be sure to unplug the power cord before removing the mounting plate, removing the power cord or cleaning.



- The power cord must not be damaged. Ensure no strain or pressure is put on the power cord. The power cord should not be bent, stretched, twisted or pinched. A damaged power cord can cause electric shock or fire and must be replaced immediately.
- Verify that the voltage of the electricity supply system and the voltage of the device are compatible. To this end take note of the type label on the projector.
- Operate the device only with the housing closed completely.
- Prevent small objects from intruding into the enclosure through openings, such as necklaces, hairpins, screws. Penetrating items can cause electric shock or fire.
- The device may only be used in dry, closed rooms. Do not operate the device in a humid environment or near dripping or splashing water.
- Do not place any containers with liquids next to the device, such as flower vases or drinks. If the device comes into contact with any liquids it may result in electric shock or fire.
- If, despite all precautions, liquid is spilled into the unit, it must immediately be disconnected from the mains. Do not touch the housing - ingress of liquids may cause an electric shock! Turn on the power again, if you are sure that the device is thoroughly dried.



- If you hear unusual noises, see smoke or strong odor strikes, pull the power plug immediately and contact your technical service. Continued use could result in electric shock or fire.



- Unplug the projector when it is not being used for a long period of time.

## BURNS AND FIRE SAFETY

- Do not operate the unit near easily flammable substances such as alcohol or benzine.
- Keep a safe distance of at least 0.3 m between the light emission at the front lens and combustible materials and surfaces.
- Avoid touching the hot device during operation. Turn the unit off and let it cool at least 10 minutes before servicing the unit or changing the gobo.
- The device is designed for normal room temperature. High ambient temperatures or direct sunlight may damage the unit.
- Make sure that the device is adequately supplied with fresh air, so that it does not overheat. Never cover the projector with objects.
- When the device is installed in a closed wall, ceiling or cabinet, ensure a sufficient supply of fresh air.



## LAMP SAFETY

- As with any bright light source, do not look directly into the light beam of the LED! The projector complies with the European standard EN62471-5 and is classified as RG-2 (Risk Group 2) device.

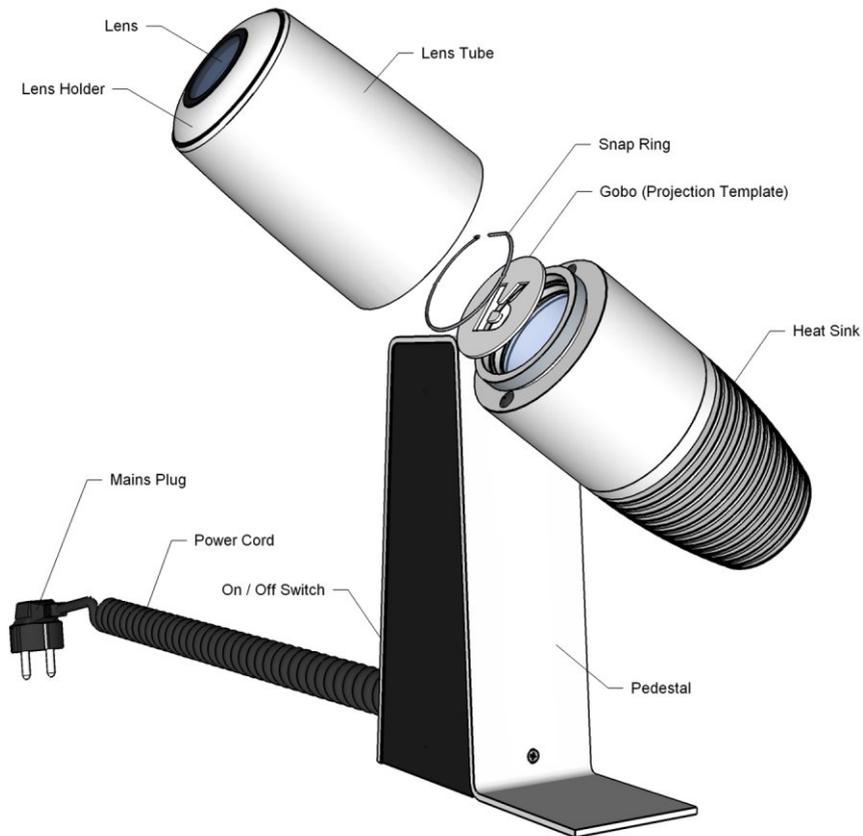


## SAFETY DURING INSTALLATION AND OPERATION



- Ensure that the supporting structure, such as ceiling, curtain wall or truss system, can carry at least four times the weight of the device, so at least 11.2 kg (safety factor 4). Observe the local safety regulations!
- Always use the appropriate mounting accessories according to the local conditions, such as anchors, screws, etc.
- Make sure that the lens tube and lens are attached firmly so that they can not fall down.
- Do not place the device on shaky stands, uneven surfaces, vibrating surfaces or moving objects.
- Use only genuine accessories and spare parts from Derksen Lichttechnik, which have been specially developed for use with the device. Use only glass gobos, metal gobos or special color slides as projection templates.
- Do not alter, disassemble, or otherwise damage the projector, since otherwise it will no longer meet the safety requirements.

# TECHNICAL OVERVIEW

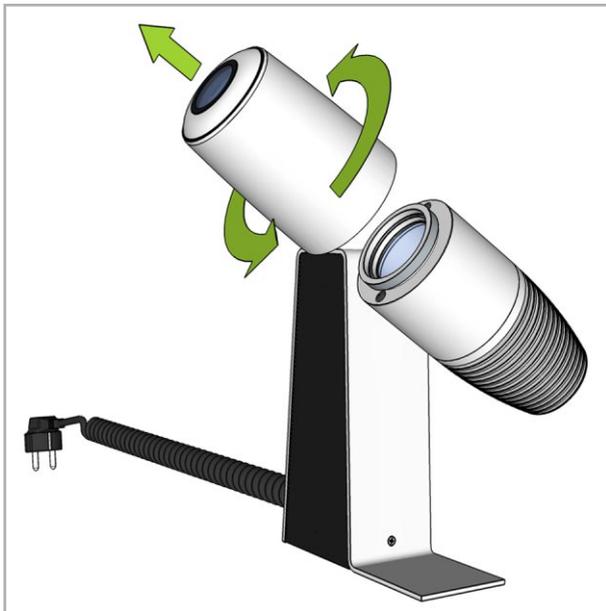


*Technical overview of the projector and its components*

# SETTING UP

## Step 1:

*Turn the lens tube counterclockwise and remove it from the projector.*

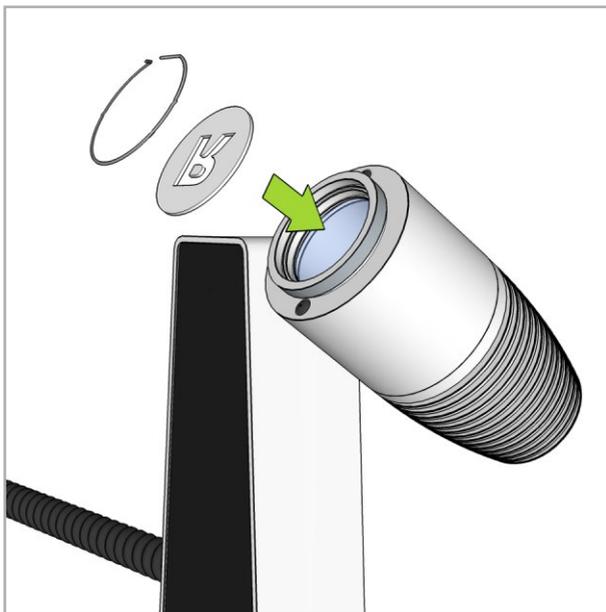


## Step 2:

*Insert the gobo in the light output of the device.*

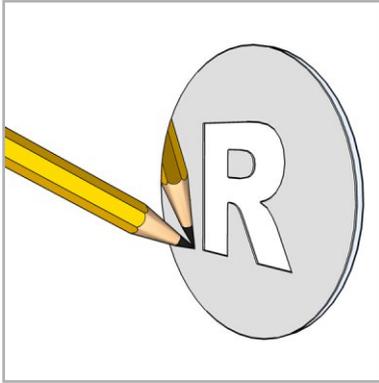
*Insert the snap ring in the light output, while squeezing it slightly.*

*Push the snap ring inside until it fixes the gobo.*

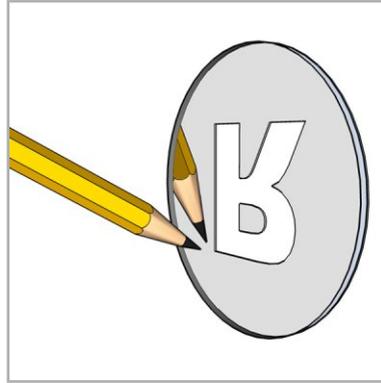


### How to place a gobo correctly:

The coated side should face to the light source, the motif should be upside down.



**Coated side:** *the object is reflected directly and without a gap. The coated side should face the light source.*



**Glass side:** *there is a small gap between the object and its reflection. The glass side should face the lens.*

- Put the lens tube on the projector and turn it clockwise until it is firmly attached.
- Switch the device on and align the projected image.
- Focus the projected image by turning the lens in the lens tube forward or backward (step 4).
- Eventually you need to align the projected image by rotating the gobo (step 3). Therefore, the lens tube must be removed again.

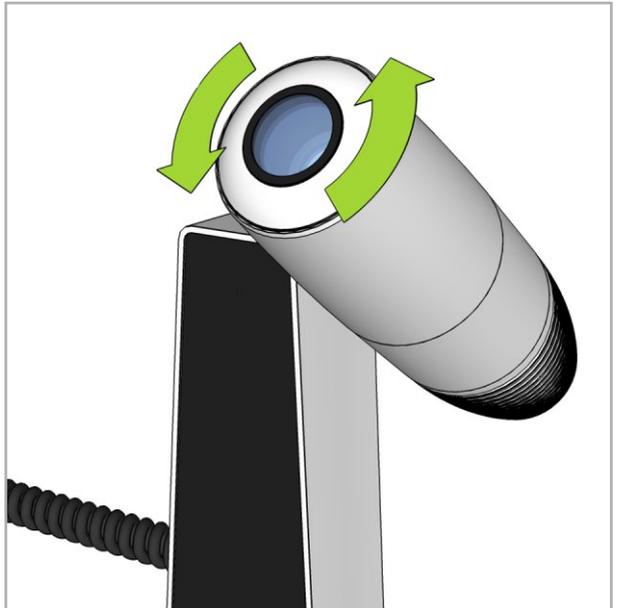
**Step 3:**

*Rotate the gobo to align the projected image.*



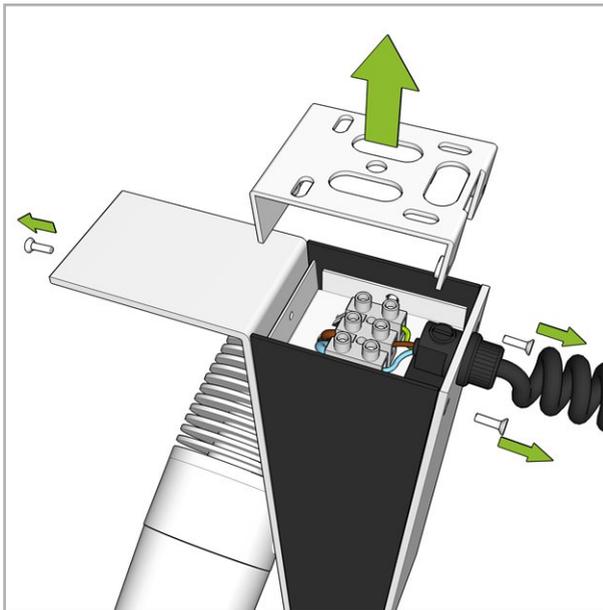
**Step 4:**

*Focus the projected image by turning the lens.*



# INSTALLATION

- Determine the most appropriate location before you install the device permanently!  
Turn on the device and set up the projection onto the intended surface. If projection size and angle are set optimally, mark the position of the device.
- Loosen the 3 screws on the pedestal of the projector and remove the mounting plate (step 1). Attach the mounting plate with 4 screws  $\varnothing$  4 mm to a floor, wall or ceiling. Be sure to use the appropriate mounting accessories for your type of surface, such as anchors, screws etc!



## Schritt 1:

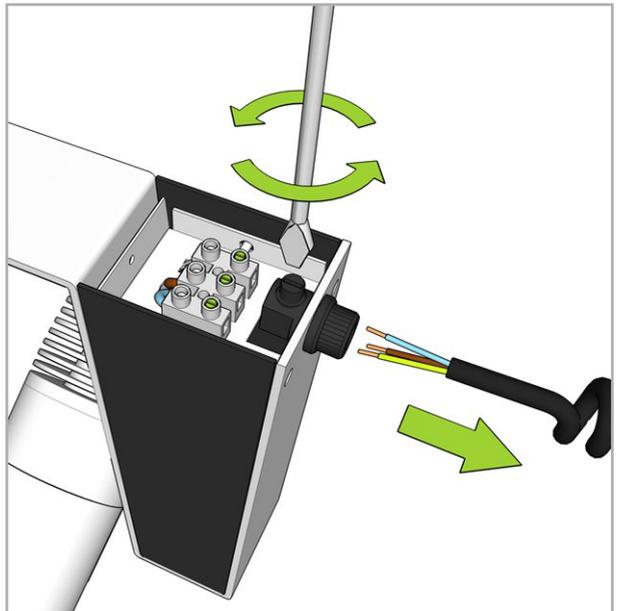
*Loosen the 3 screws  
and remove the  
mounting plate.*



- **All electrical work must be performed by a qualified electrician!**
- The LED projector can be connected to a wall or ceiling outlet. This requires first that the power cord with mains plug is removed from the device, as described below (step 2).
- Feed the new cable through the opening in the mounting plate and connect the wires according to the color code to the terminal block.

### Step 2:

*Removing the power cord with mains plug. First loosen the screws on the terminal block, then the screw of the strain relief.*



# CLEANING, REPAIR AND SERVICE

- Clean the device only from the outside with a soft cloth. Do not use strong detergents or solvents such as alcohol or benzine.
- Use only optical cleaning cloths to clean the front lens.
- Repairs and cleaning of the inside may only be performed by a qualified service technician.
- Devices can be returned for service or repair directly to Derksen Lichttechnik GmbH. Transport and ship the device in its original packaging. If this is not available anymore, you can use a cardboard box with adequate padding on the inside.
- Only use genuine spare parts from Derksen Lichttechnik.

# TECHNICAL SPECIFICATIONS

|  |                                  |
|--|----------------------------------|
| item:.....   | PHOS 20                          |
| housing:.....  | aluminium                        |
| weight:.....   | 2.8 kg                           |
| on / off switch:.....  | on the backside of the pedestal  |
| environmental conditions:.....                                       | for dry indoor environments only |
| pivot range:.....  | approx. 320° vertical            |
| cooling:.....  | passiv, noiseless                |
| light source:.....   | 20 W High-Power LED              |
| recommended projection distance in normal room light:.....           | 3 m                              |
| recommended projection distance in darkness:.....                    | 8 m                              |
| average lifetime of the LED:.....                                    | 35,000 operating hours           |
| colour temperature:.....   | 6,500 - 8,000° Kelvin            |
| luminous flux of the LED:.....                                       | 1,700 lumens                     |
| gobo size / image size:.....   | 50 mm ø / 35 mm ø                |
| voltage:.....  | 100 - 240 V AC / 50 - 60 Hz      |
| active power (power consumption):.....                               | 27 W                             |
| apparent power:.....   | 59 VA                            |
| efficiency: .....  | 0,46 cos. φ                      |
| electrical protection:.....  | protection class I               |
| ingress protection rating:.....                                      | IP 20                            |
| photobiological safety according to ICE62471:2006 EN62471:2008:..... | RG-2                             |
| item number:   |                                  |
| silver.....  | 20000130                         |
| black.....   | 20000120                         |
| white.....   | 20000110                         |

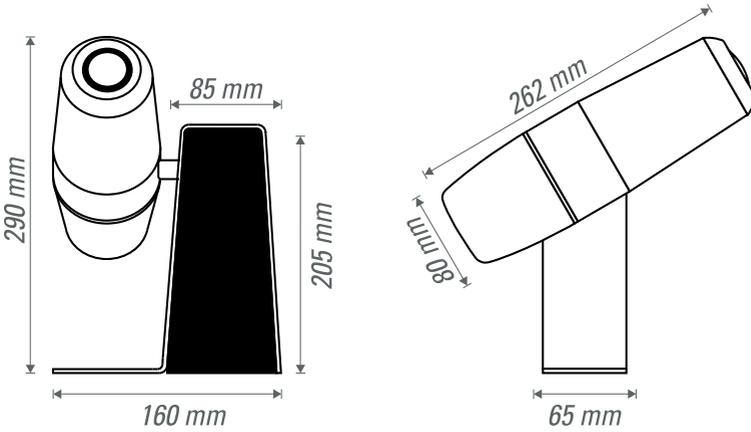
## Configuration

Standard series with high power LED, 85 mm standard lens, mounting plate for standing or fixing to walls or ceilings, power cable with plug. The machine is ready to plug in and run. Required accessories: glass gobo with individually designed motif.

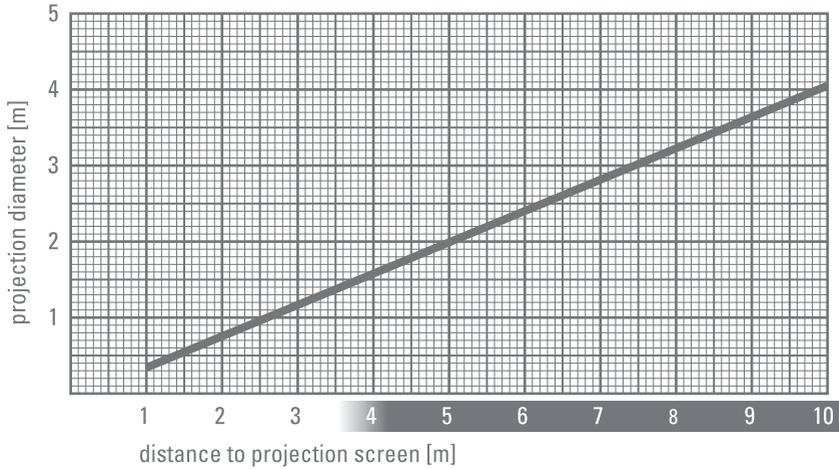
CE IP 20



## Dimensions



## Projection diameter with increasing distance



*We reserve the right to make technical and optical modifications.  
Our general terms and conditions apply.*

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