

# Instruction Manual

## VOLKS|LICHT<sub>Z</sub> **R-G-B / Zoom**



from software version 1.06  
(Instruction version 1.6)



— since 1994 —

e-mail: [service@glp.de](mailto:service@glp.de)  
Internet: <http://www.glp.de>

Notes:

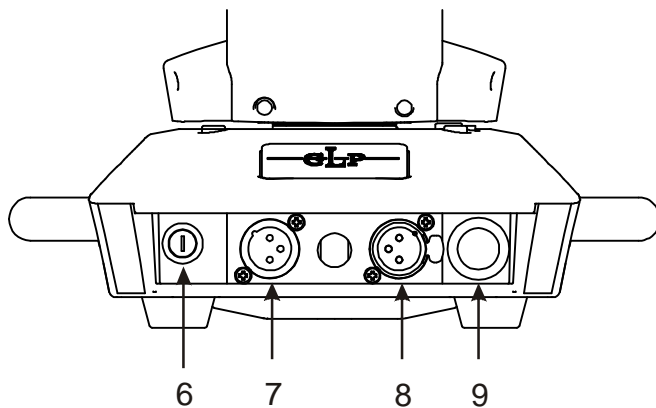
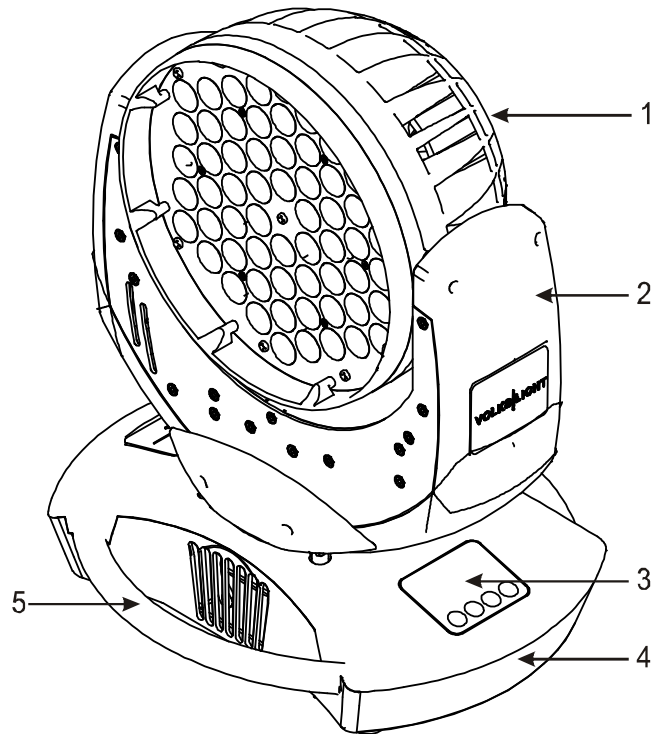
Dotted lines for note-taking.

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## 1 Description of Device

1. Moving head (actively and passively cooled)
2. Arm with various cooling vents
3. LCD-Display/Menu (data entry)
4. Base with various connectors and Camlock mounting system
5. Carrying handle. It is also used to attach the safety cable



6. Micro-fuse 5x20mm, T2A
7. DMX- Input (3 pole)
8. DMX- Output (3 pole)
9. Power On-/Off

## 1.1 Safety Instructions



The **VOLKSLICHT ZOOM** is an advanced technology product. To guarantee smooth operation, it is necessary to follow the following instructions.

The manufacturer of this device will not take responsibility of damages through any disregard of the information in this user manual. Warranty claims will also be cancelled in the event of the system casing being opened.



If the external cable of this lighting is damaged, it should be replaced by the manufacturer or its service agent or a qualified person, to avoid danger.

1. Make sure that before powering up the fixture, the fans and air inlets are clean and not blocked by anything.
2. Before powering up the fixture, ensure that the moving head part of the fixture can rotate unhindered through its full range of movement.
3. A safety distance of at least 0.5 m to any easily flammable material (e.g. decoration material) must be adhered to.
4. **Attention!** Don't touch the device during operation. Parts of the fixture can become hot and can cause injuries and / or damages.
5. The system doesn't contain any user serviceable parts. Opening the fixture will void the manufacturers warranty.
6. Danger of burning. Wait at least 15 minutes after disconnecting the AC power before changing the optical carrier on the fixture. Pay attention to possible hot parts of the system.
7. **Never look directly into the beam of light or one of the LEDs.** Never use optical apertures with a distance less than 0.5 m to observe the beam of light. **LED Class 2M.** Not following these precautions can result in serious injury to your eyes and in particular, your retina.



**Attention:** LED Class 2M can cause injuries of your eyes even without optical instruments in front of them or within a distance of less than 0.5m and short exposure time.

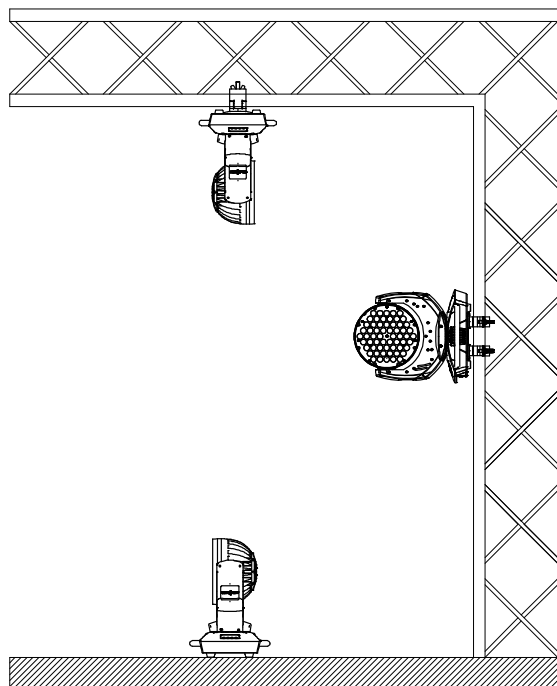
**Avoid direct radiation to your eyes!**

8. To ensure proper operation, you must also follow the installation guide described in chapter 0 of this manual. Operating the **VOLKSLICHT ZOOM** without suitable mounting devices can increase the risk of an accident.
9. The **VOLKSLICHT ZOOM** features a unique small and lightweight design with no specific carrying handles. Care needs to be shown when handling the fixture to ensure that no unnecessary damage should occur. Fragile areas include the LCD display and cover on one side arm and the front bezel. Pressure in these areas could result in damages which will not be covered by the standard warranty.
10. Repair-, maintenance- and installation work should only be performed by qualified or GLP certified staff. You need to pay attention to the common rules of technology that are not explicit mentioned in this manual.
11. Use only original spare parts. Any structural modification on the system will terminate all warranty claims.
12. Please keep this instruction manual for future reference.
- 13.

## 2 Preparation and Installation

### 2.1 Mounting

The **VOLKSLICHT ZOOM** is fully operational whether it hangs or is mounted to the wall. It can also be operated while standing on the floor. Keep a safety distance of 0.5 m towards any easily inflammable materials (decoration etc.).





Pay attention to the regulations of: BGV C1 (former VBG 70) and DIN VDE 0711-217.

The installation shall be done by qualified staff only.

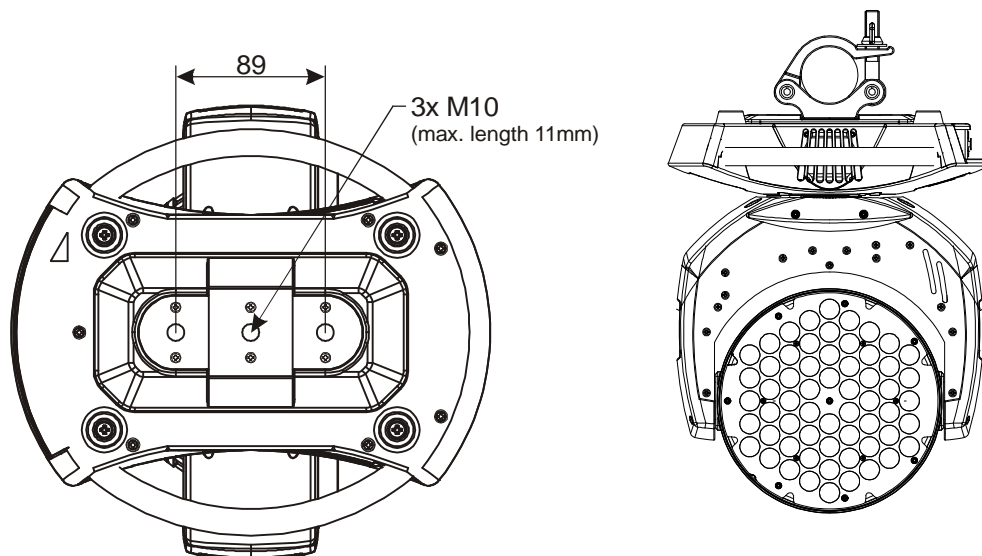
For the various mounting positions of the **VOLKSLICHT** (standing on the floor, sideways or hanging) different accessories kits are available. Using any required kits, along with the standard mounting connectors on the base of the fixture, will ensure a safe and firm installation.

### 2.1.1 Mounting on the floor (upright)

The **VOLKSLICHT** is equipped with four robust rubber feet. This allows a firm and safe stand on even surfaces.

### 2.1.2 Mounting in hanging position (Head down)

To operate the **VOLKSLICHT** in an hanging position, please use a half-coupler (clamp) which is mounted directly onto the bottom side of the system. It is fixed centrally with a M10 thread bolt (max. length 11 mm).

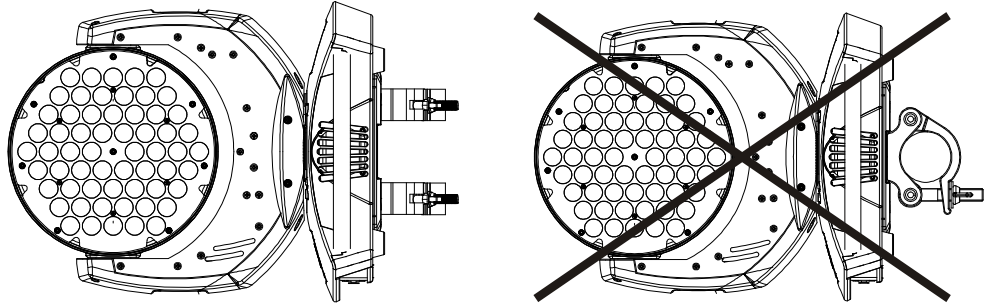


### 2.1.3 Mounting in sideways position

To operate the **VOLKSLICHT ZOOM** in an sidewise position, please use **two** half-couplers (clamps) which are mounted directly onto the bottom side of the system. They are fixed with two M10 thread bolts (max. length 11 mm).

This technique is necessary to cope with the torque which accrues in this mounting position. In addition it allows a concentrically position between

two truss belts. Never use the "Mounting in hanging position" technique described above to secure the fixture in a sideways position, as the fixtures base can become damaged, and a secure installation cannot be assured.



## 2.2 Securing the Device

Regardless of the mounting method of the **VOLKSLICHT** you'll have to use a secondary safety wire. This safety wire can be attached to the fixture by threading it through one of the two holes provided on the base of the fixture. Ensure that the safety wire is securely fastened through the fixture and the fixtures mounting support. Install a safety wire that can hold at least 10 times the weight of the fixture.

## 2.3 Connections

### 2.3.1 Power Supply

~100-240 Volt AC, 50-60 Hz, earth contact type plug, via Powercon

Connected load 180 VA (W)  $\Leftrightarrow$  T2A (micro-fuse 5x20mm)

Please see printing on the case for the right electronic supply!

**Disconnect from the mains supply for changing the fuse and use only the above described micro-fuse type.**

### 2.3.2 DMX

USITT DMX-512 Standard input/output in 3 pole connectors.

3 pole: Pin 1 = [Ground] / Pin 2 = [-] / Pin 3 = [+]

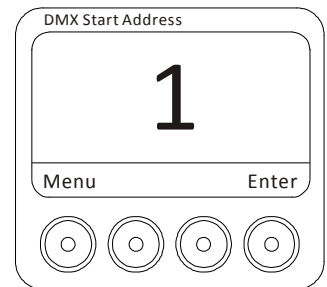
The DMX- Addressing starts at the DMX- Address [001].



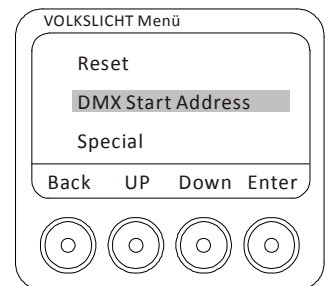
### 3 The Menu Field

You'll find the illuminated control board on the upper side of the base. It allows you to make all necessary adjustments of the system.

The current DMX address will be shown on the top level of the menu. Use the **Enter**-key to adjust the DMX address or press the **Menu**-key to reach the next level of the menu where other settings can be made.



With the **Enter**-key you reach the main menu. Afterwards you can navigate through the menu with the **Up/Down**-keys. Push the **Enter**-key to get in the next menu level or to confirm your settings. Adjust them and set functions **ON/OFF** with the **Up/Down**-keys. Confirm and save it with the **Enter**-key (the display shows **OK**). Use the **Back**-key to cancel the entry and to go back to the main menu.



← BACK - ENTER →

← DOWN - UP →

| Level1            | Level 2     | Level 3          | Level 4 | Remark   |
|-------------------|-------------|------------------|---------|--|
| DMX Start Address |             |                  |         | Define the DMX start address   |
| Special           | Manual DMX  |                  |         | Manual control of all system functions                                       |
|                   |             | Pan              |         | Manual control for Pan (X-movement)  |
|                   |             | Tilt             |         | Manual control for Tilt (Y-movement)   |
|                   |             | Speed            |         | Speed adjustment for Pan/Tilt movements → see also item below                |
|                   |             | P/T              |         | Manual control for Pan/Tilt movement   |
|                   |             | Color Wheel      |         | Manual control for the color wheel   |
|                   |             | Red              |         | Manual control for red   |
|                   |             | Green            |         | Manual control for green   |
|                   |             | Blue             |         | Manual control for blue  |
|                   |             | Special          |         | Manual control for special   |
|                   |             | Dimmer           |         | Manual control for the dimmer  |
|                   |             | Shutter          |         | Manual control for the shutter   |
|                   |             | Zoom             |         | Manual control for the zoom  |
|                   | Contrast    |                  |         | Adjustment for the Display contrast  |
|                   | Default Set |                  |         | Resetting all functions to original values                                   |
|                   | Versions    |                  |         | Reads out the current LED dimmer (software) version                          |
|                   | Adjust      | Key code<br>xxxx |         | Use the code for entering the calibration menu (for authorized persons only) |

← DOWN - UP →

|                          |                     |
|--------------------------|---------------------|
|                          | <b>Diagnose</b>     |
|                          | <b>Pan Offset</b>   |
|                          | <b>Tilt Offset</b>  |
|                          | <b>Clear EEPROM</b> |
| <b>P/T Speed</b>         |                     |
| <b>Temperatures</b>      |                     |
| <b>Testmode</b>          |                     |
| <b>DMX Hold</b>          |                     |
| <b>Position Feedback</b> |                     |
| <b>Adjust White</b>      |                     |
|                          | <b>Red</b>          |
|                          | <b>Green</b>        |
|                          | <b>Blue</b>         |
| <b>DMX Monitor</b>       |                     |
|                          | <b>Pan</b>          |
|                          | <b>Tilt</b>         |
|                          | <b>Speed</b>        |
|                          | <b>P/T</b>          |
|                          | <b>Color Wheel</b>  |
|                          | <b>Red</b>          |
|                          | <b>Green</b>        |
|                          | <b>Blue</b>         |
|                          | <b>Special</b>      |
|                          | <b>Dimmer</b>       |
|                          | <b>Shutter</b>      |
|                          | <b>Zoom</b>         |

|                     |                 |
|---------------------|-----------------|
| <b>Live time</b>    |                 |
| <b>Display</b>      |                 |
|                     | <b>Blackout</b> |
| <b>Reverse Pan</b>  |                 |
| <b>Reverse Tilt</b> |                 |
| <b>Reset</b>        |                 |

|  |
|--|
| Diagnose functions   |
| Calibration for Pan-Offset   |
| Calibration for Tilt-Offset  |
| Erase EEPROM memory  |
| Normal Speed and Fast Speed  |
| Indicates the head and base temperature  |
| Performs an automatic self-test  |
| Defines whether the last DMX signal is stored or the lamp is switched OFF in case of signal interruption |
| Automatically position feedback (correction) for Pan/Tilt movement. ON/OFF                               |
| Adjustments for a uniform white color (white balance); only in white-mode                                |
| Input for red adjustments  |
| Input for blue adjustments   |
| Input for green adjustments  |
| Indicates the presently received DMX signal per DMX channel  |
| Instantaneous value for Pan  |
| Instantaneous value for Tilt   |
| Instantaneous value for Speed  |
| Instantaneous value for Pan/Tilt movements   |
| Instantaneous value for Colors   |
| Instantaneous value for Red  |
| Instantaneous value for Green  |
| Instantaneous value for Blue   |
| Instantaneous value for Special  |
| Instantaneous value for the Dimmer   |
| Instantaneous value for the Shutter  |
| Instantaneous value for the Zoom   |
| Indicates the overall operation time of the system   |
| Adjust the display   |
| ON/OFF: Display OFF  |
| ON/OFF: Invert Pan movements   |
| ON/OFF: Invert Tilt movements  |
| RESET and new calibration for all functions  |

#### 4 DMX Channel Selection (DMX Protocol)

| Channel                           | Function   | Time and Value                      | DMX      | HEX      | %        |
|-----------------------------------|--|-------------------------------------|----------|----------|----------|
| 1) PAN-coarse                     | 0 .. 660°  |                                     | 0..255   | 00..FF   | 0..100   |
| 2) PAN-fine                       | High- Pos ... High- Pos + 2,6° (16 Bit)                            |                                     | 0..255   | 00..FF   | 0..100   |
| 3) Tilt-coarse                    | 0 .. 300°  |                                     | 0..255   | 00..FF   | 0..100   |
| 4) Tilt-fine                      | High- Pos ... High- Pos + 1,2° (16 Bit)                            |                                     | 0..255   | 00..FF   | 0..100   |
| 5) Color (fixed)                  | Colors adjustable via RGB  |                                     | 0..7     | 00..07   | 0..2,5   |
|                                   | Color 01 - Red <sup>1)</sup>                                       |                                     | 8..15    | 08..0F   | 3..5,5   |
|                                   | Color 02 - Amber <sup>1)</sup>                                     |                                     | 16..23   | 10..17   | 6..8,5   |
|                                   | Color 03 - Warm Yellow <sup>1)</sup>                               |                                     | 24..31   | 18..1F   | 9..12,5  |
|                                   | Color 04 - Yellow <sup>1)</sup>                                    |                                     | 32..39   | 20..27   | 13..15,5 |
|                                   | Color 05 - Green <sup>1)</sup>                                     |                                     | 40..47   | 28..2F   | 16..18,5 |
|                                   | Color 06 - Turquoise <sup>1)</sup>                                 |                                     | 48..55   | 30..37   | 19..21,5 |
|                                   | Color 07 - Cyan <sup>1)</sup>                                      |                                     | 56..63   | 38..3F   | 22..24,5 |
|                                   | Color 08 - Blue <sup>1)</sup>                                      |                                     | 64..71   | 40..47   | 25..27,5 |
|                                   | Color 09 - Lavender <sup>1)</sup>                                  |                                     | 72..79   | 48..4F   | 28..30,5 |
|                                   | Color 10 - Mauve <sup>1)</sup>                                     |                                     | 80..87   | 50..57   | 31..34,5 |
|                                   | Color 11 - Magenta <sup>1)</sup>                                   |                                     | 88..95   | 58..5F   | 35..37,5 |
|                                   | Color 12 - Pink <sup>1)</sup>                                      |                                     | 96..103  | 60..67   | 38..40,5 |
|                                   | White - CTO  | Color temperature 3200K             |          | 104..111 | 68..6F   |
| White                             | Color temperature 5600K  |                                     | 112..119 | 70..77   | 44..46,5 |
| White - CTB                       | Color temperature 7200K  |                                     | 120..127 | 78..7F   | 47..49,5 |
| Rainbow Effect Stop <sup>2)</sup> |  |                                     | 128      | 80       | 50       |
| Rainbow Effect <sup>3)</sup>      | slow - fast  |                                     | 129..223 | 81..DF   | 51..88   |
| Rainbow Effect, random colors     | slow - fast  |                                     | 224..255 | E0..FF   | 89..100  |
| 6) Red                            | Color mixing system - Red  | 0 - 100%                            | 0..255   | 00..FF   | 0..100   |
| 7) Green                          | Color mixing system - Green  | 0 - 100%                            | 0..255   | 00..FF   | 0..100   |
| 8) Blue                           | Color mixing system - Blue   | 0 - 100%                            | 0..255   | 00..FF   | 0..100   |
| 9) Shutter                        | Shutter closed   |                                     | 0..15    | 00..0F   | 0..5,5   |
|                                   | Random Pulse effect  | slow - fast                         | 16..47   | 10..2F   | 6..18,5  |
|                                   | Up-dimming then Shutter closing (random patterns)                  | slow - fast                         | 48..79   | 30..4F   | 19..31   |
|                                   | Shutter open then down-dimming (random patterns)                   | slow - fast                         | 80..111  | 50..6F   | 32..43   |
|                                   | Up-dimming then down-dimming (random patterns)                     | slow - fast                         | 112..143 | 70..8F   | 44..56   |
|                                   | Strobe effect pause  | 5s .. 1s                            | 144..199 | A0..C7   | 57..77   |
|                                   | Strobe effect, slow - fast <sup>4)</sup>                           | 1 Hz .. 10 Hz                       | 200..239 | C8..EF   | 78..94   |
|                                   | Strobe effect <sup>4)</sup>  | 25 Hz                               | 240      | F0       | 94,4     |
|                                   | Strobe effect <sup>4)</sup>  | 50 Hz                               | 241      | F1       | 94,8     |
|                                   | Shutter open   |                                     | 242..255 | F3..FF   | 95..100  |
| 10) Dimmer                        | Dimmer   | 0 - 100%                            | 0..255   | 0..FF    | 0..100   |
| 11) Color Temperature             | Continuous color temperature correction in the range 3200K - 7200K | Applies only to white <sup>5)</sup> | 0..255   | 0..FF    | 0..100   |
| 12) Special                       | RESET  |                                     | 250..255 | FA..FF   | 98..100  |
| 13) Movement                      | No Movement  |                                     | 0        | 0        | 0        |
|                                   | Movement   | Size                                | Phase    |          |          |
|                                   | PAN  | 1                                   | 0°       | 01..01   | 01..01   |

| Channel                   | Function   | Time and Value            | DMX      | HEX    | %       |
|---------------------------|--|---------------------------|----------|--------|---------|
|                           | 1  | 90°                       | 02..03   | 02..03 | 1,0     |
|                           | 1  | 180°                      | 04..05   | 04..05 | 1,7     |
|                           | 1  | 270°                      | 06..07   | 06..07 | 2,5     |
|                           | PAN  | 2                         | 0°       | 08..09 | 3,3     |
|                           |  | 2                         | 90°      | 10..11 | 4,1     |
|                           |  | 2                         | 180°     | 12..13 | 4,9     |
|                           |  | 2                         | 270°     | 14..15 | 5,7     |
|                           | PAN  | 3                         | 0°       | 16..17 | 6,5     |
|                           |  | 3                         | 90°      | 18..19 | 7,3     |
|                           |  | 3                         | 180°     | 20..21 | 8,0     |
|                           |  | 3                         | 270°     | 22..23 | 8,8     |
|                           | PAN  | 4                         | 0°       | 24..25 | 9,6     |
|                           |  | 4                         | 90°      | 26..27 | 10,4    |
|                           |  | 4                         | 180°     | 28..29 | 11,2    |
|                           |  | 4                         | 270°     | 30..31 | 12      |
|                           | TILT   | size / phase see also PAN | 32..63   | 20..3F | 13..25  |
|                           | PAN / TILT   | size / phase see also PAN | 64..95   | 40..5F | 26..37  |
|                           | PAN / TILT (inverse)   | size / phase see also PAN | 96..127  | 60..7F | 38..50  |
|                           | Circle   | size / phase see also PAN | 128..159 | 80..9F | 51..62  |
|                           | Circle (inverse)   | size / phase see also PAN | 160..191 | A0..BF | 63..75  |
|                           | Lying eight  | size / phase see also PAN | 192..223 | C0..DF | 76..87  |
|                           | Random movement  | size see also PAN         | 224..255 | E0..FF | 88..100 |
| <b>14) Speed Pan/Tilt</b> | This channel is only for the SPEED of the movements not for Pan/Tilt |                           | 0..255   | 00..FF | 0..100  |
| <b>15) Zoom</b>           | Zoom 0% - 100%   | 10° - 26°                 | 0..255   | 0..FF  | 0..100  |

<sup>1)</sup> The predefined colors can be used as start colors for the Rainbow effect. First select a desired start color, then activate the rainbow effect. All **VOLKSLICHT ZOOM** will then begin from that color and execute the rainbow effect synchronously. Different **VOLKSLICHT ZOOM** can have different start colors but will still execute the rainbow effect synchronously. If you choose a color different from the ones marked with <sup>1)</sup> in the tables above the rainbow start-color will be red.

<sup>2)</sup> Rainbow-effect Stop will pause this function. After resuming the rainbow-effect will be continued with the current color.

<sup>3)</sup> The Rainbow-effect will run synchronously only if it is started from one of the predefined colors (see also <sup>1)</sup> before).

<sup>4)</sup> **Attention:** Please note that shutter frequencies over 10 Hz are prohibited in some countries. Especially frequencies in the range of 5 - 12 Hz can possibly cause epileptic seizures → continuous blink irritation with a latency period of min. 70 ms. Please also refer to the relevant legislation of each country (For Germany for example: BGI 810-4 (Anhang 2) "Sicherheit bei Produktionen und Veranstaltungen - Scheinwerfer").

<sup>5)</sup> The continuous color temperature correction applies only to white i.e. if this function is activated (DMX ≥ 001) the **VOLKSLICHT Zoom** changes to white and can then be controlled in a range of 3200K - 7200K. A color temperature correction for other colors is therefore not foreseen.

## 5 Maintaining and Cleaning the VOLKSLICHT ZOOM

The **VOLKSLICHT ZOOM** is a low maintenance fixture. It is only necessary to clean the air inlets and outlets as well as the optical LED lenses from time to time. For safe operation it is absolutely essential that the fixture is kept clean and that dust, dirt and smoke-fluid residues must not build up on, or within, the fixture. If they do, the fixture's light output will be significantly reduced, and damages to the fixture may occur. Regular cleaning will not only ensure the maximum light output, but will also allow the fixture to operate reliably throughout its entire life.

**A soft lint-free cloth moistened with any good glass cleaning fluid is recommended. Under no circumstances should alcohol or solvents be used to clean the fixture or its lenses!**

### 5.1 Safety regulations

- **Disconnect the fixture from the mains power before commencing any maintenance work!**
- Wait minimum 15 minutes after removing the power to allow the fixture to cool down.

### 5.2 Circumference and Interval (rule-of-thumb)

The contamination of the fixture depends on the environment details. Hence no general guidelines can be given. The intervals given below are only suggestions from our practice experience.

| Maintenance Task                          | Interval | How                            |
|---|----------|--------------------------------|
| Cleaning of LED lenses and optical system | weekly   | soft brush /lint-free cloth    |
| Cleaning of fans and air channels         | monthly  | vacuum cleaner, airbrush, etc. |

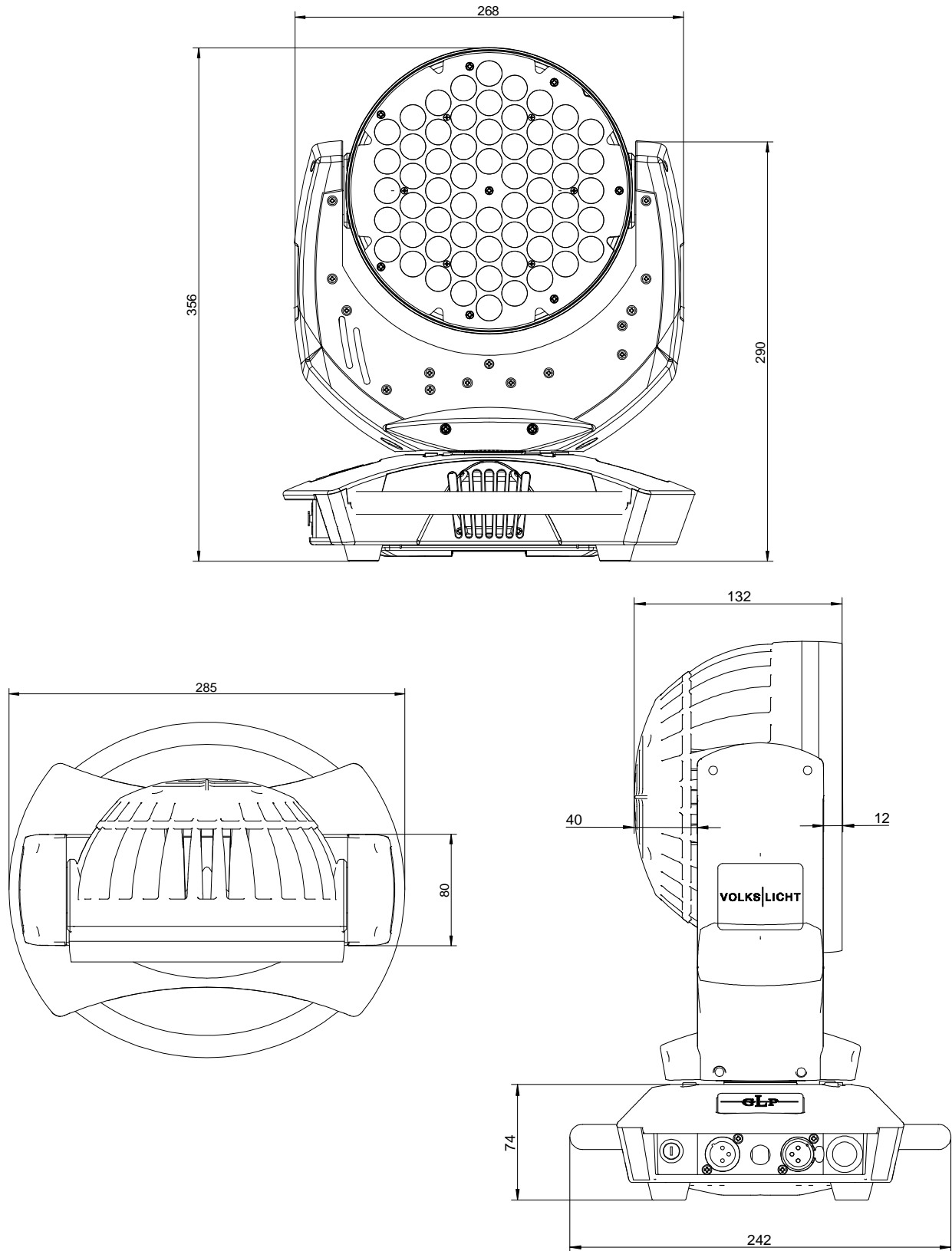
#### **Attention:**

- **Never let optical parts come into contact with oil or fat.**
- **Before running the fixture wait until all parts are dried up.**
- **Never touch lenses with bare fingers.**

## 6 Technical Specifications

|   |   |
|---|---|
| <b>Power supply</b>   |   |
| <b>Power consumption</b>  | 180 VA (Watt)   |
| <b>Power Input</b>  | ~100-240 V AC, 50-60 Hz (auto sensing input)          |
| <b>Fuse protection</b>  | Micro-fuse 5x20 mm, T2A                               |
| <b>Operational Parameters</b>   |   |
| <b>Max. Ambient Temperature</b>   | 45°C / 113°F (integrated overheating switch)          |
| <b>Mounting Position</b>  | Any (see chapter mounting)                            |
| <b>Lighting System - Additive Color mixing</b>  |   |
| <b>LED Type</b>   | 60x Luxeon Rebel High-power- LEDs                     |
| <b>Lifetime</b>   | 50.000 h  |
| 21x LEDs blue, 21x LEDs green and 18x LEDs red<br>Wavelength optimized for maximum presentable color space                            |   |
| <b>Optical System</b>   |   |
| High efficient Collimator cluster   |   |
| Fix optical carrier with light distribution angle from 10° - 26°  |   |
| Scattering light aperture   |   |
| <b>Shutter / Dimmer (8 Bit)</b>   |   |
| Strobe- Effect with variable speed between 1 - 10 flashes per second, Random-Strobe, Pulse-Effects                                    |   |
| Continuous Dimmer 0 - 100%  |   |
| <b>DMX Control</b>  |   |
| Standard USITT DMX-512, 3 pole XLR; [+] = Pin 3 [-] = Pin 2 [Ground] = Pin 1.<br>Die DMX- Addressing starts at the DMX channel [001]. |   |
| <b>Pan/Tilt (8/16 Bit)</b>  |   |
| <b>Pan- movement</b>  | <b>660° in min. 2 seconds, with position feedback</b> |
| <b>Tilt- movement</b>   | <b>300° in min. 1 seconds, with position feedback</b> |
| <b>Weights and Measures</b>   |   |
| <b>Width of the base</b>  | <b>285 mm</b>   |
| <b>Length of the base</b>   | <b>242 mm</b>   |
| <b>Height (head vertical)</b>   | <b>356 mm</b>   |
| <b>Weight (net)</b>   | <b>7,8 kg</b>   |

7 System dimensions (in mm)



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