

# MLT 3000 2.0

Headlight Tester

Original Operating Instructions

BA381001-en

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#### Dear Customer,

MAHA is one of the world's leading manufacturers of testing and lifting technology and places particular emphasis on quality and performance. The company's concept includes the development, manufacture and sale of products for use in automotive workshops, by vehicle manufacturers and testing organisations.

MAHA's claim is to also be a leader in the areas of reliability, safety and sustainability – this can be seen in many details that have been developed with these aspects in mind.

We are convinced that you will be more than satisfied with the quality and performance of our products for many years. With the purchase of our products you will also receive professional assistance in case of need for service and repair.

Please remember to keep these operating instructions in a safe place. Accurately following their contents will significantly extend the life of your product and also increase its resale value. If you sell your product, please also pass on the operating instructions.

MAHA is constantly working on the further development of all products and therefore reserves the right to make changes, e.g. in shape and appearance, without prior notice.

Extensive accessories, useful assembly material and auxiliary materials are available for our products. For further information, please ask your dealer or your MAHA contact person at any time.

Thank you for choosing a MAHA product!

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# 1 General Safety Instructions

# 1.1 Introduction

Thoroughly read this manual before operating the equipment and comply with the instructions. Always display the manual in a conspicuous location.

Personal injury and property damage incurred due to non-compliance with these safety instructions are not covered by the product liability regulations.

# 1.2 Symbols and Signal Words

# 1.2.1 Personal Injury



# DANGER

indicates an immediate hazard which, if not avoided, will result in death or severe personal injury.



# WARNING

indicates a potential hazard which, if not avoided, could result in death or severe personal injury.



# CAUTION

indicates a potential hazard which, if not avoided, could result in moderate or minor personal injury.

# 1.2.2 Property Damage

# NOTICE

indicates a potentially harmful situation which, if not avoided, could result in damage to the equipment or surrounding objects.

# **1.3 Requirements on Operating and Service Personnel**

All persons employed in the operation, maintenance, installation, removal and disposal of the device must

- be at least 18 years old,
- be mentally and physically suited for these activities,
- be demonstrably trained and instructed in writing,
- have read and understood the operating instructions, especially the instructions what to do in the event of defects or malfunctions,
- be on record as having been instructed in safety guidelines,
- have practical experience in working with vehicle lifts and the hazards inherent in such equipment.

# 1.4 Intended Use

This device only serves to check and adjust the alignment of vehicle headlights.

This device cannot be modified without the express, written consent of the manufacturer. Any infringement renders the conformity declaration invalid.

# 2 Description

# 2.1 General Information

The MLT 3000 2.0 digital headlight tester is used to quickly and objectively check and adjust vehicle headlights. It takes into account all statutory limits and any OEM specifications.

Unevenness in the installation area of the device is compensated for by an electronic level equaliser. The 7-inch touchscreen ensures intuitive menu navigation and clear display of the measured values.

# 2.2 Requirements for the Place of Installation

Please observe your national directives and specifications.

# 2.3 Technical Data

Measuring range	above hotspot	0800 mm / 10 m (08 %)
	above pitch angle	0300 mm / 10 m (03 %)
	below	0700 mm / 10 m (07 %)
	left	01000 mm / 10 m (010 %)
	right	01000 mm / 10 m (010 %)
Light intensity		0125 000 cd
Illuminance		0200 lx
Measuring distance	2	100500 mm
Adjustment path of	lens centre above floor .	2201500 mm
Deviation of intensi	ty	±5 %
Deviation from one	axle	±5'
Compensation of fl	oor unevenness	±3 %
Temperature		+5+40 °C
Relative humidity		
Supply voltage		100240 V AC, 50/60 Hz
Charging voltage /	Battery voltage	12 V DC / 7.2 V DC
Dimensions (W x H	x D)	655 x 1770 x 720 mm
Net weight / Shippi	ng weight	
Type approval num	ber	TPN 2023-02-2206578

# 2.4 **Overview with Components**



- B Column
- **C** Display
- **D** Battery compartment
- F USB port
- **G** Casing, with push handle
- H Chassis

# 2.5 Electronic Levelling

This headlight tester comes standard with an electronic position sensor which determines the inclination angle of the device. The software compensates possible deviations in the X- and Z-axes while calculating the position of the headlights.

The headlight tester may be set up on uneven surfaces even if the ground unevenness is outside the permissible tolerances, provided that the maximum unevenness does not exceed the headlight tester's self-levelling capacity of 3%.

After enabling the respective function, the compensation values can be checked using a dot or cross hair laser. See section "Operation > Settings > Calibrating the Camera according to Directive".

# NOTICE

This function must be enabled exclusively by authorised service technicians and is applicable for the respective test surface only.

## 2.5.1 Compensation Coordinate Axes



# 2.5.2 Angle Symbols

Once the adjustment of the inclination sensor has been completed, an angle symbol appears in the info bar to indicate the adjusted/active inclination axes.

	Service Service	e menu	16:15 Software: 1.11.000 EN
Overview	of symbols:		
X	Both axes adjusted/active, headlight tester ready for operation	Z-axis active, heac tester ready for opera	llight ation
XX	Both axes active, inclination of Z- and X-axis too large, no measurement possible	Z-axis active, inclination large, no measure pos	n too ment sible
۲ ۲	Both axes active, inclination of X-axis too large, no measurement possible	X-axis active, head tester ready for opera	llight ation
ZY	Both axes active, inclination of Z-axis too large, no	X-axis active, inclination large, no measure	n too ment

# 2.6 Definition of Technical Terms

measurement possible

2.6.1 Pitch Angle



The inclination of the light-dark limit against the test surface is expressed as a percentage, using 10 m as a reference parameter:

H[cm]-h[cm] 1000 cm x 100% possible

#### 2.6.2 Low Beam



#### A Light-dark limit

Boundary of light distribution between 'top dark' and 'bottom light' for lowbeam lights.

#### **B** Inflection point

Inflection point of light-dark limit for asymmetric low-beam lights. The deviation of the inflection point is expressed in percentage.

#### $\alpha$ Yaw angle

Angle between the section of the light-dark limit rising at the right of the inflection point and the horizontal for asymmetric low-beam light.

#### β Roll angle

Angle between the left section of the light-dark limit and the horizontal, usually 0°.

#### 2.6.3 High Beam



#### C Central mark

From the central mark, the deviation of the hot spot in X and Y directions is

specified in percentage or optionally in angular minutes.

'I' indicates the illuminance in Lux or optionally the light intensity in Candela in the area of the central mark.

# D Hot spot

Centre of light beam for high-beam. The deviation of the hot spot from the central mark is expressed in percentage.

'H' indicates the illuminance in Lux or optionally the light intensity in Candela in the area of the hot spot.

# 2.6.4 SI Units of Brightness

## Light intensity I in Candela

The candela [cd] is the SI unit of light intensity. It describes the luminous flux emitted by the entire light source in a specific direction.

# Illuminance E in Lux

The lux [lx] is the SI unit of illuminance. It defines the illumination produced by a luminous flux of 1 lumen when it is distributed evenly over an area of  $1 \text{ m}^2$ .

# 3 Transport and Storage

# 3.1 Safety Instructions

# NOTICE

Check package to ensure it is complete, in accordance with the order confirmation. Report any transport damage to the carrier immediately.

During loading, unloading and transport always use suitable lifting equipment, material handling equipment (e.g. cranes, forklifts, etc.) and the right load handling attachments and slings. Always ensure that the parts to be transported are suspended or loaded properly so that they cannot fall, taking into account size, weight and the centre of gravity.

Store the packages in a covered area, protected from direct sunlight, at a low humidity and with temperatures between 0...+40 °C (32...104 °F). Do not stack packages.

When unpacking, take care to avoid any possibility of injury or damage. Keep at a safe distance when opening the package strapping, do not allow any parts to fall out.

# 4 Operation

# 4.1 Safety Instructions

NOTICE

- The device may only be operated within its performance limits.
- All parts of the electrical system must be protected against damp and humidity.
- Never expose the lens to direct sunlight. The bundling of light may cause fire damage inside the casing.

# 4.2 Switching On / Off

The headlight tester is operated via buttons on the capacitive touchscreen. The ON/OFF button is on the right-hand side underneath the touchscreen.



# 4.3 Aligning the Headlight Tester





# CAUTION

Never look into the laser beam (laser class 2M). Comply with work safety and accident prevention directives (H&SW regulations) in respect of laser radiation.

- 1 When using guide rails, position the headlight tester centrally in front of the vehicle. Without guide rails, the tester must be adjusted in front of each headlight. Please observe your national directives and specifications.
- 2 To align the headlight tester to the vehicle, switch on the laser in the alignment unit. To do this, tap the sensor button on the front of the alignment unit with your finger. The laser is activated for approx. 22 seconds and then switches off again automatically.
- 3 Swivel the laser line to the front of the vehicle. Align the laser line with two symmetrical reference points on the vehicle by rotating the headlight tester casing.

A mirror unit is optionally available. In this case, align the headlight tester so that the line lies on two symmetrical reference points on the vehicle.

# INFO

- Tapping the sensor button when the laser is activated resets the timer.
- One battery charge is sufficient for approx. 4500 activations.
- The alignment unit is powered by a built-in 3.7 V Li-ion battery. The battery can be charged by connecting the USB-C charging socket in the cover of the alignment unit to the USB-A socket on the tester housing.



- Alternatively, charging can be carried out via an external USB power supply unit (not included).
- A complete charging process takes approx. 5 hours and is completed automatically.
- The laser can also be used during the charging process.

# 4.4 Selection Buttons: Icon Description

## 4.4.1 Main Menu



#### 4.4.2 Manufacturer-Specific Headlight Settings (OEM)





Button ALL makes several measurement levels available.



Use the Down button to navigate through the measurement levels.

## **INFO**

OEM section! Carry out the test according to manufacturer's instructions.

#### **Performing a Headlight Test** 4.5

Main menu > Paragraph icon > Target values



To start the measurement, press the desired light button.

1		Adjusting direction:		
-	-	Green tick	= Everything OK	
		Yellow arrow	= Minor deviation within tolerance range	
		Red arrow	= Outside tolerance	



PA: -0.9% IP: -0.1% I: 22.9lx G: 4.4lx YawAngle: 13.9° RollAngle:-1.8°	PA = Pitch angle IP = Inflection point I = Intensity in lux G = Glare YawAngle * RollAngle *	* Display of Yaw and Roll angle can be additionally activated under 'User settings > Meas. Value Angles'.
िके	New vehicle, measure	ment values are discarded
••	Switchover to continu	ous measurement:

image is permanently re-evaluated

Switchover to static measurement: image is evaluated only once

#### 4.5.1 **Measuring Menu: Zoom Function**

0



The function can be activated by pressing the ZOOM button.

The light image can be magnified up to 300 % by repeatedly pressing the button.

In the User settings, the zoom function can be enabled/disabled and adjusted from 150 % to a maximun of 300 %.

# 4.5.2 Measuring Menu: Manual Inflection Point Function





Move vertical line to the right

Save inflection point, 'Change is marked'

The manual inflection point function can be enabled/disabled in the 'User settings'.

#### 4.5.3 Quick Mode

Quick mode is used to quickly check the low beam. Here, the headlight tester is permanently in measuring mode.

The display of the cut-off line and the result values for pitch angle and inflection point can be switched on and off using the 'Measurement results ON/OFF' button.

The 'Corridor ON/OFF' button can be used to show and hide an adjustable corridor.

In general, the result is not evaluated in Quick Mode. If Quick Mode is activated, the SEP starts directly in this view when it is switched on without preselection.

For enabling/disabling see section 'User settings'.





Using the Up/Down buttons, the target value can be adjusted in the range from -1.0% to -1.2%.

Button shows/hides the corridor for the cut-off line and the limit markings for the inflection point.



Button shows/hides the cut-off line and the result values for pitch angle and inflection point.

# 4.5.4 Saving the Measurement Values to PDF

At completion of the headlight measurements, the results can be saved as PDF file to a USB stick.



The USB button only appears in the measurement and adjustment menu when a USB stick is recognised by the headlight tester.

The test values are available in folder 'MLT3000 Results' with date and time stamp, for example:

'TestvaluesDDMMYYYY\_123456.pdf'.

The two lines of the customer header can be edited in the variables, section 'Customer variables'.



# 4.5.5 LED Adjustment Aid (Option)



This optional unit is integrated into the window casing (A) above the Fresnel lens. The colour LEDs (B) pointing toward the vehicle indicate the direction of adjustment.

Green LED =	Optimum setting (corresponds to green evaluation in the display centre)
Yellow LED =	Minor deviation within tolerance range (corresponds to yellow direction arrows on the display)
Red LED =	Outside tolerance (corresponds to red direction arrows on the display)
	To use this function, activate continuous measurement by pressing this button.

## 4.6 User Menu



Press the hamburger menu button (top left in the main menu) to open a list with functions available for the user.





Software update MLT 3000/3000V2 via USB stick



Battery status check



Date/time adjustments

AD converter values (inclination, temperature, battery voltage/ current)



By tapping the flag button, additional languages are displayed for selection.

# 4.6.1 User Settings



Enables access to the most important functions.



Lux Candela	Choose unit of intensity.
Percent [%] Degree [°]	Choose unit of pitch angle and inflection point evaluation.
Right-hand traffic Left-hand traffic	Switch between right- and left-hand traffic.
Regressed	Display straight line instead of point cloud of light-dark cut-off.
Key tone	Activates acoustic message when tapping the display buttons.
Set IP manually	Activates button to manually set the inflection point in the measurement.

Signal warning	If the headlight tester is moved while the battery is being charged, a warning is issued on the display.
Glare active	Activates measurement of low-beam glare.
USA (SAE) headlights	Switch over to evaluation according to SAE standard (VOR/VOL).
Show angle on display	Activates determination of yaw and roll angle.
New vehicle	Activates this button in the measurement screen; button discards all measurements and directly opens the main menu.
Adjust on start	Measurement always starts with continuous evaluation.
Quick Mode	See section 'Quick Mode'.
Screenshot >USB	Activates button to save a screenshot to a USB medium during measurement.
AutoMeas. >USB	Exports measurement results automatically to a USB medium.

**. ⊥** 

Switch to next page of settings.







Switch to next page of settings.

¥	User adjustments 3	73% SW Beta: 2.00.056 EN
Audi		
Katalateranga		
<ul> <li>Image: Image: Ima</li></ul>		
۰ ک	() Ford	

Choose vehicle manufacturers to be available in OEM menu.

## 4.6.2 User Variables



# 4.6.3 PC Connection via Bluetooth

- Wireless connection via Bluetooth, MAHA order number: VZ 990312
- Using these interfaces, a connection can be established with MAHA's EU-ROSYSTEM software (only in conjunction with V7.50.xxx or higher).
   Download available at: <u>https://www.maha.de/en/software/downloads</u>



Add a device

Dig MLT3000 (SN:497790-001)

170354

🔒 Device Manager

<u>File Action View Help</u>

Print queues

> 📕 Portable Devices 🗸 🛱 Ports (COM & LPT)

Press Connect if the PIN on MLT3

Connect

🗢 🔿 | 📰 | 🔛 | 🔢 | 🤬 | 💻 | 💺 🗙 📀

Kommunikationsanschluss (COM1)

Standardmäßgige Seriell-über-Bluetooth-Verbindung (COM3)
 Standardmäßgige Seriell-über-Bluetooth-Verbindung (COM4)

A Bluetooth stick must be connected to the headlight tester for the button to be visible. Pressing the button starts pairing mode.



Confirm the request with 'Yes'. The headlight tester is now discoverable by other Bluetooth devices for 120 seconds.



(SN:497790-001) matches this one

Cancel

 $\times$ 

Make sure that your device is turned on and discoverable. Select a device below to

Open the Bluetooth settings on the computer > 'Add a device'.



Choose the discovered headlight tester and click on 'Connect'.

At the headlight tester, confirm pairing. The device is now ready for operation.

Open the Device Manager and check the COM interface for the Bluetooth connection under 'Ports (COM & LPT)'.

For setup in EUROSYSTEM see section 'EUROSYSTEM Settings'.

# 4.6.4 Software Update

Software updates are performed using a USB stick (FAT32 format).

1 Format the USB stick in FAT32:

Connect the USB stick to the PC, open the Windows Explorer, right-click the USB stick and choose "Format". In the following window under File system: choose "FAT32 (Standard)" and "Start".

### INFO

- Maximum data carrier size for FAT32 is 32 GB.
- Formatting permanently deletes all data on the USB stick. If necessary, carry out a data backup beforehand!
- 2 Download the software update to the PC from the MAHA homepage:

https://www.maha.de/en/software/downloads

- 3 Execute the downloaded file by double-click. Click "Browse" and choose the USB stick (e.g. W:\). Confirm with "OK".
- 4 Click "Unzip", then check if folder "maha" is on the USB stick.

MLT 3000 Vers	ion 1.16.012 MAHA Group USB-Update — 🛛	×
	<ul> <li>Auf Durchsuchen klicken, einen leeren FAT32 formatierten USB-Stick auswählen und mit OK bestätigen</li> </ul>	^
	<ul> <li>Auf Entpacken klicken, um die Dateien auf den USB-Stick zu kopieren.</li> </ul>	
	Click on Browse, select an empty FAT32 formated USB flash drive and confirm with OK.     Click on Unzip to copy the files to the USB	•
	Zelverzeidnis W:1 v Durchauchen: Prinsenie bein Entgescen	
	Entpacken jäbrechen	

MAH SEP TE1 (F) formatieren

Gerätestandards giederherste

materungsoptioner

Starten Schleder

Schnelformatierung

3.72 68

Dateisystem: FAT32 (Standard)

4096 Byter

Große der Zuordnung

Volumebezeichnung: MAH SEP TB1 ×

- 5 In the Windows Explorer, right-click the USB stick and choose "Eject". Remove the USB stick from the PC.
- 6 Connect the USB stick to the USB-A port outside at the casing and start the update.



7 Wait until installation is complete and the software has been restarted.



# 4.6.5 Checking the Battery Status

Record batt	Battery status	5W Beta: 2.00.056 EN	
voltage using USB stick	Ladegerät eingesteckt Akku wird geladen		Pos
AD4: 7812	Charging voltage:	10.80 V	• 0
AD5: 5802	Battery voltage:	7.98 V	• 0
AD6: 15074	Battery current:	1.46 A	u u
			• •

# Possibility to check

- Charging and battery voltage
- Current from battery (negative value)
- Current to battery (positive value)

# 4.6.6 Setting Date and Time



# 4.6.7 Reading the AD Converter Values

¥	ADC values	5W Beta: 2.00.056 EN
AD0: 14790	Inclination Z:	-0.4 %
AD1: 13273	Inclination X:	-0.6 %
AD2: 13622	Temperature:	27.0 °C
AD3: 17948		
AD4: 185	Charging voltage:	0.00 V
AD5: 5669	Battery voltage:	7.79 V
AD6: 12749	Battery current:	-0.95 A
AD7: 6	Height:	,- cm

**O--C-**+

Specific raw values of the AD converters can be viewed here.

# 4.6.8 Selecting a Language

¥	Languages	SW Beta: 2.00.056 EN
		<u>a</u>
	C*	•
	*	
*		
		<b> </b>

Several display languages are available for selection here.

# INFO

•

The test procedure is not affected by the language chosen.

# 4.7 EUROSYSTEM Settings



	Overview light measureme	ent value	
th beam left Hotspot X: Hotspot Y: Intensity: Int. Hotspot:	- 1,5% - 0,5% 61,0 Lux 74,5 Lux connect	Hotspot X: - Hotspot Y: - Intensity: I Int. Hotspot:	1.5 % 0.6 % 62.0 Lux 76.6 Lux porred1
W beam left Pitch angle: Yaw angle: Roll angle: Break point X: Break point X: Intensity: Glace:	- 1.0 % - 1.0 % - 1.0 % - 0.0	Pitch angle: - Yaw angle: - Roll angle: Break point X: Break point Y: - Intensity: - Glare: -	1.0 % 1.0 % 2.3 ° 0.0 % 1.0 % 1.0 % 1.0 % 2.4 blux 4.6 lux 4.6 lux

Measurement value:

Set headlight

ΟΚ

setting measurement value:

Brake point:

Target value:

Set headlight

OK

setting measurement value:

Pitch angle

- 0,5

14,5

2 1,5

Hotspot X [%]

5 1,0

ΞD

High beam left

-

ight-hand traff

۰ 🕤

ow bean. right

، ک

-

R

An overview of the measurement values appears. Select the desired measurement.

The selected measurement data is displayed in detail.

Adjusting the headlights:

Use the camera button on the headlight tester display to switch over to headlight adjustment.

EUROSYSTEM shows the coordinates, the measurement values and the headlight image in real time.

The headlight image graphics can be updated manually using the <Request graphic> button.

 Determine the point
 Image: Target value:
 Image: Target value:

upper: 1,5 [%] lower: 1,0 [%] left: 2,0 [%] right: 2,0 [%] nsity [Lux

upper: - 0,5 [%] lower: - 1,5 [%] left: - 0,5 [%] right: 0,5 [%] neity [Lux] 16,0

8 8

8 -

The image transmission can be completely disabled via soft DIP. System > Settings > Softdips Display/Printout > No. 14

9	Low beam right	(1
Low beam	no picture available	Evaluation correct
CAR Right-hand traffic	Measurement value:         Beek point X           Var angle []         Roll angle []         Beek point X           - 1,0         12,4         - 1,8         0,1           Beek point Y         Interview [Luo]         Glare [Luo]         Glare [Luo]           - 1,0         2 1,5         4,2         -	Limit value: upper: - 0,5 [%] lower: - 1,5 [%] ieft: - 0,5 [%] right: 0,5 [%] lintensity [Lux] 16,0

# 4.8 Service Menu

Open the Service menu by tapping the MAHA logo in the Main menu.



# 4.8.1 Country-Specific Defaults



# INFO

After switching over, returning from some country-specific procedures is possible only with technician password.

# 5 Energy Management and Troubleshooting

# 5.1 Charging the Battery

The charger plug is plugged into the round hollow plug socket on the side of the housing (see illustration).

If the 'cable connection' option (VZ 990312) is installed, the power supply and data transmission take place via the XLR plug on the underside of the SEP. In this case, the hollow plug socket is not connected.

# NOTICE

Simultaneous operation of both connections is not permitted!



A normal charging process takes approx. 11 hours. The full battery capacity is reached when the charging current has dropped to 0.00 A.

₹X *	Battery status	5W Beta: 2.00.056 EN
Record batt. voltage using USB stick	Ladegerät eingesteckt Akku wird geladen	
AD4: 7812 AD5: 5802	Charging voltage: Battery voltage: Battery current:	10.80 V 7.98 V 1 46 A

## INFO

The battery indicator at the top right of the touchscreen only roughly corresponds to the battery charge level.

# 5.2 Battery Status

## 5.2.1 Battery Life

The battery has a nominal capacity of 13,400 mAh and allows up to 15 hours of continuous operation in the workshop at an optimum ambient temperature of 20  $^{\circ}$ C.

## 5.2.2 Display of Charge Level

The charge level is calculated via the current drawn or supplied. This function is only available once the battery has been fully charged, as the actual battery capacity must be determined by the electronics.

After disconnecting the charger, a plausibility check is carried out once for each device start. The calculated total amount of energy [mAh] is compared with the battery voltage.

If these values do not match, the charge level is determined in 10% increments (5%...95%) based on the battery voltage. The value for the stored energy is also replaced by a preset default value. Although this method is not strictly accurate, it guarantees a reliable charge level display in every operating situation, even when the battery is replaced.

# 5.2.3 Energy Saving Function

The display dims after 10 minutes of inactivity. The device is immediately ready for operation again by touching the touchscreen. After 120 minutes without activity, the device switches off completely and must then be switched on again manually. These default settings can be customised in the user variables.

## 5.2.4 Protection against Deep Discharge

To prevent deep discharge of the battery, the device switches off at 6.6 V remaining capacity. The switch-off is independent of the capacity display. The battery itself has an additional undervoltage switch-off at a cell voltage of 2.4 V.

## 5.2.5 Protection against Mechanical Damage

If the device is set in motion with the charger connected, the following image appears on the display with an acoustic warning signal.

(Only if the warning is activated, see section 'Operation > User menu').



# 5.3 Data Recording for Error Analysis



To record this data, a USB stick is required, which is plugged into the USB-A socket on the outside of the housing.

When recording is active, the device does *not* switch off automatically after 2 hours.

The recorded battery status data enables optimum analysis in problem cases.

# 5.4 Troubleshooting

AD5: 5802

AD6: 15074



Battery voltage:

Battery current:

7.98 V

1.46 A

This message may appear after updating older software versions. Acknowledge with 'Wait'.

# 6 Maintenance

# 6.1 Safety Instructions

# NOTICE

- The device must be cleaned at regular intervals. Only clean the lens with a soft cloth and glass cleaner.
- Do not use high pressure or steam pressure equipment or harsh cleaning agents for cleaning.
- All service work must be performed by service technicians employed by the manufacturer or by authorised service partners.

# 6.2 Spare Parts

To ensure safe and reliable operation, only use original spare parts supplied by the equipment manufacturer.

# 7 Disposal

If you want to dispose of the equipment, please contact your MAHA dealer or the following address, indicating equipment type, date of purchase and serial number:

MAHA Maschinenbau Haldenwang GmbH & Co. KG Hoyen 20 | 87490 Haldenwang | Germany

Phone: +49 (0) 8374 585 0 Fax: +49 (0) 8374 585 500 Email: info@maha.de

Alternatively, you may take the equipment to a specialised waste management plant to ensure that all components and operating liquids are properly disposed of.

# 7.1 Disposal of Batteries

As a distributor, MAHA is obliged to take back aged or defective lithium-ion batteries. However, to reduce costs and effort, it is advisable to return them to a local waste disposal company.

# 8 Declaration of Conformity

See following page(s).

# Original-EU-Konformitätserklärung Original EU Declaration of Conformity

CE381001-de-en



#### MAHA Maschinenbau Haldenwang GmbH & Co. KG

erklärt hiermit als Hersteller in alleiniger Verantwortung, dass nachstehend bezeichnetes Produkt in Konzeption und Bauart den grundlegenden Sicherheits- und Gesundheitsanforderungen der hier genannten Richtlinien entspricht.

Bei Änderungen am Produkt, die nicht von oben genannter Firma genehmigt wurden, verliert diese Erklärung ihre Gültigkeit. herewith declares as a manufacturer its sole responsibility to ensure that the product named hereafter meets the safety and health regulations both in design and construction required by the directives stated below.

This declaration becomes void if any change is made to the product that was not approved by named company beforehand.

#### Typ | Model

MLT 3000 2.0	VP 185081
MLT 3000 2.0 P	

#### Bezeichnung | Designation

Scheinwerfer-Einstell-Prüfgerät

#### **Richtlinien | Directives**

2014/30/EU 2014/35/EU

#### Normen | Standards

EN ISO 12100:2010 EN 60204-1:2018 EN IEC 61000-6-3:2021 EN IEC 61000-6-4:2019

Gesetze | Regulations

Produktsicherheitsgesetz ProdSG

Headlight Tester

Serialnummer | Serial Number

Product Safety Act ProdSG

#### Bevollmächtigter für die Zusammenstellung der technischen Unterlagen Person Authorised to Compile the Technical File

Ralf Kerkmeier, MAHA Maschinenbau Haldenwang GmbH & Co. KG, Hoyen 20, 87490 Haldenwang, Germany

Haldenwang, 2024-12-01



Dr. Peter Geigle Geschäftsführer | Managing Director

