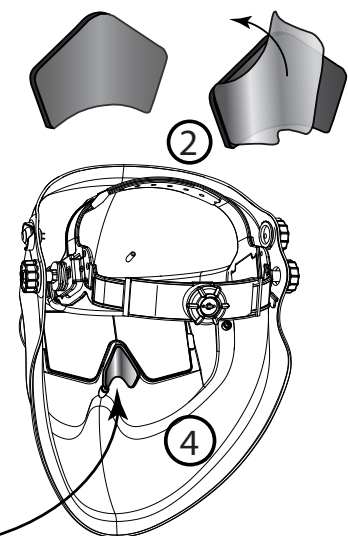
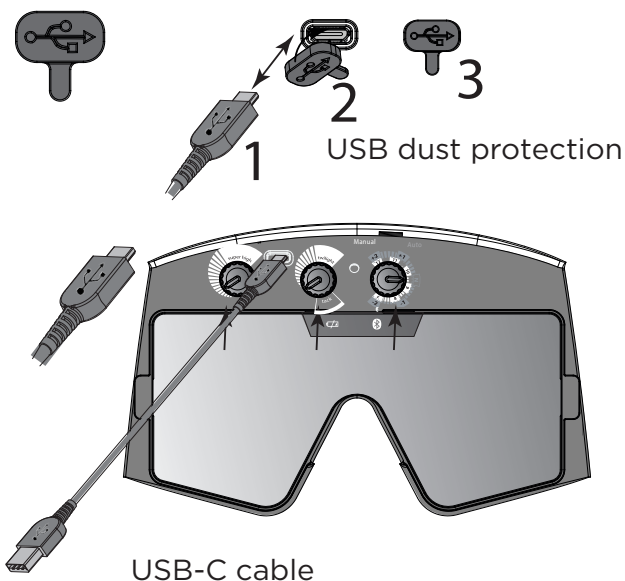


nose protection



USB-C cable/ USB dust protection



## are parts

umbers: see last page

|  |      |
|--|------|
|  | SP01 |
|  | SP02 |
|  | SP03 |
|  | SP04 |
|  | SP05 |
|  | SP06 |
|  | SP07 |
|  | SP08 |

### accessories

|  |                        |      |
|--|------------------------|------|
|  | parking buddy          | SP09 |
|  | chest protection       | SP10 |
|  | head & neck protection | SP11 |

### spare parts/accessories PAPR








|  |                             |      |
|--|-----------------------------|------|
|  | head & neck protection PAPR | SP12 |
|  | faceseal for PAPR           | SP13 |
|  | air hose holder for PAPR    | SP14 |

# Schutzstufentabelle EN169

## Shade level chart EN169

# Tableau des niveaux de protection EN169

## Tabella dei livelli di protezione EN169

|                                 |   | Ampere |   |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |
|---------------------------------|---|--------|---|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Process                         |   | 1.5    | 6 | 10 | 15 | 30 | 40 | 60 | 70 | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 300 | 350 | 400 | 450 | 500 | 600 |
| MMA                             |                  | 8      |   |    |    |    |    |    | 9  |     | 10  |     | 11  |     | 12  |     | 13  |     | 14  |     |     |     |
| MIG heavy metals                |  Fe              |        |   |    |    |    |    |    | 9  |     | 10  |     | 11  |     | 12  |     | 13  |     | 14  |     |     |     |
| MIG light metals, Al, Stainless |  Al              |        |   |    |    |    |    |    |    |     | 10  |     | 11  |     | 12  |     | 13  |     | 14  |     |     |     |
| TIG                             |                  |        |   |    | 8  |    | 9  |    | 10 |     | 11  |     |     | 12  |     | 13  |     |     |     |     |     |     |
| MAG                             |  CO <sub>2</sub> | 8      |   |    |    |    |    |    | 9  |     | 10  |     | 11  |     | 12  |     | 13  |     |     |     |     |     |
| Plasma cutting                  |                  |        |   |    |    |    |    |    |    |     | 9   |     | 10  | 11  | 12  |     | 13  |     |     |     |     |     |
| Micro plasma welding            |                  | 4      | 5 |    | 6  |    | 7  | 8  |    | 9   | 10  |     | 11  |     | 12  |     |     |     |     |     |     |     |

Je nach persönlichem Empfinden kann die nächst höhere oder tiefere Schutzstufe verwendet werden.

According to the perception of the welder it is possible to use the next higher or lower shade number.

Selon la perception du soudeur il est possible d'utiliser un échelon de protection plus haut ou plus bas.

A seconda della sensibilità personale è possibile impostare il livello di protezione immediatamente superiore o inferiore.

Die auf dem Schweißerschutzfilter angebrachte Kennzeichnung bedeutet:

2.5/ 7-12  
2.5/ 5<12M

Helstufe  
Dunkelstufen

OS / 1 / 1 / 1 / 2 EN379  
OS / 1 / 1 / 1 / 2 EN379

Hersteller  
Optische Klasse  
Streuichklasse  
Homogenität  
Blickwinkelabhängigkeit  
Nummer der Norm

The marking on the welding filter indicates:

2.5/ 7-12  
2.5/ 5<12M

Light shade  
Dark Shade range

OS / 1 / 1 / 1 / 2 EN379  
OS / 1 / 1 / 1 / 2 EN379

Manufacturer  
Optical Class  
Diffusion of light class  
Homogeneity  
Angular dependence  
Number of the standard

Le marquage apposé sur le filtre de protection pour soudeur signifie :

2.5/ 7-12  
2.5/ 5<12M

Échelon de protection à l'état clair  
Échelon de protection à l'état foncé

OS / 1 / 1 / 1 / 2 EN379  
OS / 1 / 1 / 1 / 2 EN379

Identification du fabricant  
Classe optique  
Classe de la diffusion de la lumière  
Homogénéité  
Angulaire dépendance  
Marque de certifications

IlI contrassegno riportato sul filtro di protezione per saldatore contiene i seguenti dati:

2.5/ 7-12  
2.5/ 5<12M

Grado di protezione in stato chiaro  
Grado di protezione in stato scuro

OS / 1 / 1 / 1 / 2 EN379  
OS / 1 / 1 / 1 / 2 EN379

Identificazione del fabbricante  
Classe ottica  
Classe della diffusione della luce  
Omogeneità  
Angolare dipendenza  
Numero della norma

Kennzeichnung Helmschale:

OS EN 175 B

Hersteller  
Nummer der Norm  
Mittlere Stoßenergie

Marking helmet shell:

OS EN 175 B

Manufacturer  
Number of the standard  
Medium energy impact

Marquages masque :

OS EN 175 B

Identification du fabricant  
Marque de certifications  
Impacts moyenne énergie

Marcaggi maschera:

OS EN 175 B

Identificazione del fabbricante  
Numero della norma  
Impatto media energia

Kennzeichnung  
Sicherheitschutzscheibe:

OS 1 B EN 166

Hersteller  
Optische Klasse  
Mittlere Stoßenergie  
Nummer der Norm

Marking safety protection lens:

OS 1 B EN 166

Manufacturer  
Optical class  
Medium energy impact  
Number of the standard

Marquages écran de protection :

OS 1 B EN 166

Identification du fabricant  
Classe optique  
Impacts moyenne énergie  
Marque de certifications

Marcaggi vetro di protezione:

OS 1 B EN 166

Identificazione del fabbricante  
Classe ottica  
Impatto media energia  
Numero della norma

## English

### Introduction

A welding helmet is an item of headgear that is used to protect the eyes, face and neck from burns, UV light, sparks, infrared light and heat during certain welding operations. The helmet consists of several parts (see spare parts list). An automatic welding filter combines a passive UV filter and a passive IR filter with an active filter whose light transmittance in the visible range of the spectrum varies depending on the light intensity in the welding arc. The light transmittance of the automatic welding filter has a high initial value (light state). After switching on the welding arc and within a defined response time, the light transmittance of the filter changes to a low value (dark state). Depending on the model, the helmet can be combined with a safety helmet and/or a PAPR (Powered Air Purifying Respirator) system.

### Safety instructions

Read the instruction manual before using the helmet. Make sure the finisher is mounted correctly. If faults cannot be remedied, the ADF must no longer be used. For further information, please contact your authorised retailer.

### Precautions & protective restrictions / risks

During the welding process, heat and radiation are released; this can cause eye and skin injuries. This product provides protection for the eyes and face. Your eyes are always protected against ultraviolet and infrared radiation when wearing the helmet, regardless of the protection level selected. Appropriate protective clothing must also be worn to protect the rest of your body. Particles and substances released during the welding process can trigger allergic skin reactions in persons with this disposition. With sensitive persons, skin contact with the head part can lead to allergic reactions. The welding helmet may only be used for welding and grinding and not for other applications. The manufacturer accepts no liability if the welding helmet is not used as intended or not used in accordance with the instructions for use. The helmet is suitable for all common welding processes, except gas and laser welding. Please note the protection level recommendation according to EN169 on the wrapper.

The helmet does not replace a safety helmet. Depending on the model, the helmet can be combined with a safety helmet.

The design features of the helmet may affect the field of vision (no peripheral vision without turning the head) and the light transmittance of the automatic darkening filter may affect colour perception. As a result, signal lamps or warning indicators may not be seen. Furthermore, there is a risk of impact due to the larger contour (head with helmet). The helmet also impairs hearing and reduces the sensation of heat.

### Sleep mode

The ADF has an automatic switch-off function that increases the battery life. If less than 1 lux of light reaches the ADF for approx. 10 minutes, the ADF switches off automatically (not in Bluetooth Modus). To switch the cassette back on, the solar cells must be briefly exposed to daylight. If the ADF can no longer be activated or does not darken when the welding arc is ignited, the batteries must be replaced.

### Warranty & liability

The warranty conditions can be found in the instructions of the manufacturer's national sales organisation. Contact your authorised specialist retailer for more details. A warranty is only given for material and manufacturing defects. In the event of damage due to improper use, unauthorised intervention or use not provided for by the manufacturer, the warranty and liability are void. The liability and warranty are also void if spare parts other than those distributed by the manufacturer are used.

### Expected Lifetime

The welding helmet does not have an end-of-life date. The product can be used as long as no visible or invisible damage or malfunctions occur.

### Operating permit

Changes or modifications made to this equipment not expressly approved by optrel tec ag may void the FCC authorization to operate this equipment.

### Application (Quick Start Guide p. 4-5/Functions p. 6-7)

Correct adjustment of the headband is very important for this product, because the benefits of the large field of view are only ensured if the headband is correctly adjusted.

- Headband head size/circumference.** Adjust the upper adjustment strap to your head size. Push in the ratchet knob and turn until the headgear fits well but does not exert pressure. Make sure that your eyes are approximately in the centre of the field of vision. (p. 5 no. 3a)
- Eye distance.** You can loosen the locking buttons to adjust the distance between the cassette and the eyes. Position the helmet as close as possible to the eyes (the closer the ADF is to the eyes, the larger your field of vision will be). Adjust both sides equally without tilting. Then tighten the locking buttons again. (p. 5 no. 3b).
- Helmet angle (excentre)** The helmet angle can be adjusted using the rotary knob. Adjust the angle so that the nose does not touch the cut-out for the nose. Carefully perform a test to ensure that the helmet shell does not touch your nose, even when you nod (use the supplied nose pad to protect your nose). (p. 5 no. 3c).
- Operating mode automatic/manual.** You can use the slide switch to select the protection level adjustment mode. In automatic mode, the protection level is automatically adapted to the intensity of the arc by means of sensors (EN 379:2003 standard). In manual mode, the protection level can be set by turning the knob.
- Protection level.** (p. 7 No. III + IV)  
Manual mode: In "Manual" mode, you can choose between protection levels 7 to 12 by turning the protection level control knob. (Protection mode correction is disabled in manual mode). (p. 7 No. IV)  
Auto mode: In Auto mode, the protection level is automatically adjusted and corresponds to protection level 5 > 12 according to EN 379 when the rotary knob is set to position "N". By turning the knob, the automatically set protection level can be corrected by up to two protection levels upwards or downwards depending on your personal preferences (the absolute minimum and maximum protection levels, 5 and 12, respectively cannot be undershot or exceeded, regardless of the correction setting). (p. 7 No. III)
- Opening time controller/delay.** The opening time controller (Delay) (p. 6) allows you to select the opening time delay from dark to light. The rotary knob supports continuous adjustment from dark to light between 0.1 and 2.0 s (p. 6 no. II)
- Twilight effect.** The twilight effect's smooth transition from dark to light offers even better

protection of the eyes to prevent fatigue and irritation caused by afterglow from objects; it gives the eyes the time they need to acclimatise to the brightness (p. 6 No. II)

**CAUTION:** For quick tack welding, do not set the rotary knob to the Twilight range. The "Tack" range with a minimal opening delay is best suited.

8. **Bluetooth (BT)/Grinding Mode.** Pressing the grinding button turns the helmet into Bluetooth pairing mode added. In this mode, the cassette remains in the bright state and one of the following actions will be executed:

(1) There is a power source in pairing mode inside radio range. The helmet is ready for pairing. Observe the instructions of the power source for coupling to the power source and follow. After successful pairing, the LED changes from flashing to steady lighting.

(2) The power source was already paired with the helmet. The helmet connects automatically and the LED changes from flashing to steady lighting.

(3) It is none of the above. No power sources within Bluetooth is inside the Bluetooth receipt-range: The blue LED flashes and the helmet is ready for approx. 10 minutes in grinding mode.

When the pairing was successful, the cassette darkens due to the signal from the power source. When the Bluetooth is in pair mode or connected, then the optical sensors are deactivated and the helmet is in grinding mode. In Grinding mode any unintentional darkening by e.g. strong light sources, sunlight, sparks when grinding, etc. will be avoided.

An active Bluetooth connection is recognizable by the blue LED on the front of the helmet as by reflection of the light on the outer lens of the helmet.

To turn off the Bluetooth/Grinding mode: press the grinding button. (Pp. 7 no. V)

The helmet can be coupled with only one power source. When changing the power source, disconnect the connection and pair the helmet with the other power source.

9. **Sensitivity.** With the sensitivity button the light sensitivity is adjusted according to the welding arc and the ambient light. This can be individually adjusted by turning the rotary knob. A very high light sensitivity is achieved in the "Super High" range; this guarantees darkening even with weak arcs. (p. 6 No. I)

10. **Sensors.** This welding helmet has 5 sensors. 4 sensors detect the welding light and 1 sensor is responsible for detecting the light intensity (automatic mode) and the innovative Stay-Dark function.

#### Cleaning and disinfection

The ADF and the finisher must be cleaned regularly with a soft cloth. Do not use strong cleaning agents, solvents, alcohol or cleaning agents containing abrasives. Scratched or damaged lenses should be replaced.

#### Storage

The welding helmet must be stored at room temperature and low humidity. To extend the life of the batteries, store the helmet in a light environment.

After 6 months of storage, the battery must be fully charged via the USB-C connector.

#### Replacing the front cover lens (p. 8)

When changing the attachment disc, caution is required. Do not deform the helmet, as otherwise the welding filter can be damaged.

1. The front cover lens is removed from the anchorage and removed by pulling the tab on the side backwards.

2. Hook the new finisher into one side clip. Pull the finisher across to the second side clip and lock it in place. This manual action requires some application of pressure so that the seal on the finisher exhibits the desired effect.

#### Battery/charging process (p. 4 no. 1)

The helmet has a high performance lithium polymer (LiPo) battery. Before using the battery for the first time, fully charge it with the supplied micro USB cable via a commercially available USB connector (not included). After charging, the micro USB socket on the helmet must be protected from dust and dirt with the protective cap. The battery is also charged by external light sources (ceiling light, welding light) via the solar cell. If the helmet is used frequently, the battery will very rarely need charging. We recommend charging the helmet completely every 6 months. If the battery is discharged, charging for approx. 15 minutes is sufficient for an operating time of approx. 8 hours.

#### State of charge:

- 1) Red flash: Battery is almost discharged (charge immediately)
- 2) Orange permanently lit: Battery is charging
- 3) Green permanently lit: Battery is fully charged

The helmet should only be recharged when a low charge status is displayed. To increase the life of the battery, the battery should only be charged at temperatures below 45 °C.

**Note:** Do NOT charge the helmet during work (power adapter, power bank, etc.)! If the helmet does not darken when igniting the welding arc, check the charging status (press the grinding button when the LED stops flashing blue, the battery is completely drained). If the anti-glare cassette does not work properly despite the battery being charged, contact your local dealer.

A defective battery may only be replaced by the manufacturer or a Service certified by the manufacturer.

#### Troubleshooting

##### ADF fails to darken

- Adjust the sensitivity (p. 6 no. I)
- Clean the sensors or front cover lens
- Switch off the opening delay - switch to "tack" for fast tack welding (p. 6 no. II)
- Deactivate grinding mode (p. 4 no. 5)
- Charge Battery (p. 4 Nr. 1)

##### Protection level too bright

- In manual mode, select a higher protection level (p. 7 no. IV)
- In automatic mode, set the rotary knob to +1 or +2 (p. 7 no. III)
- Replace the front cover lens (p. 4 no. 4)

##### Protection level too dark

- In manual mode, select a lower protection level (p. 7 no. IV)
- In automatic mode, set the rotary knob to -1 or -2 (p. 7 No. III)

##### ADF flickers

- Adjust the position of the opening time control (delay) to suit the welding process (p. 6 no. II)
- Adjust the sensitivity controller to suit the welding process (p. 6 no. I)
- Charge the battery (p. 4 no. 1)

#### Poor visibility

→ Clean the front cover lens or ADF

→ In manual mode, adjust the protection level to suit the welding process (p. 7 no. IV)

→ In automatic mode adapt the protection level correction to suit the welding process (p. 7 no. III)

→ Increase the ambient light

#### Welding helmet slips

→ Re-adjust/tighten the headband (p. 5 no. 3a-3c)

#### Specifications (We reserve the right to make technical changes)

|   |   |
|---|---|
| Protection level  | auto mode: 2.5 (light mode)<br>5 < 12 (dark mode)<br>manual mode: 2.5 (light mode)<br>7 - 12 (dark mode)  |
| UV/IR protection  | Maximum protection in light and dark modes  |
| Switching time from light to dark                           | Pre-darkening in BT mode.<br>Optical mode (BT off):<br>100µs (23°C/73°F)<br>70µs (55°C/131°F)   |
| Switching time from dark to light                           | 0.1 - 2.0 s with "twilight effect"  |
| Power supply  | Solar cells, lithium polymer battery  |
| Weight  | 550g  |
| Operating temperature                                       | -10°C - 70°C / 14°F - 157°F   |
| Storage temperature   | -20°C - 80°C / -4°F - 176°F   |
| Classification according to EN379                           | Optical class = 1<br>Scattered light = 1<br>Homogeneity = 1<br>Dependence on angle of view = 2  |
| Operating time with fully charged battery                   | > 40h in BT-Mode  |
| Bluetooth range   | 20m in the open field   |
| Bluetooth transmission power                                | <0.8mW  |
| SAR   | not relevant due to the large distance between the head and the antenna   |
| Bluetooth Standards   | Bluetooth Version: 4.2<br>Bluetooth LE (CE) ETSI EN 300 328 V2.1.1<br>Bluetooth LE (FCC) FCC - Title 47 CFR Part 15<br>RSS - Gen Issue 5<br>RSS - 247 Issue 2 |
| EMC   | ETSI EN 301 489-17 V3.2.0   |
| Safety  | IEC 62368-1:2014 (2.Edition)<br>and Cor. 1:2015<br>EN 62368-1:2014/AC:2015/ A11:2017  |
| Bluetooth Qualification RF-PHY                              | RF-PHY TS 5.0.3   |
| Approvals   | CE, compliance with CSA Z94.3, ANSI Z87.1<br>FCC (Notice: see section "Operating permit")   |
| Additional markings for PAPR version (notified body CE1024) | EN12491 (TH3 in combination with e3000 or e3000X, TH2 for versions with hardhat and e3000 or e3000X).   |

#### FCC / CNR conformity

This device complies with Part 15 of the FCC Rules and with Industry Canada license-exempt RSS standard(s). Operation is subject to the following conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

#### Radiofrequency radiation exposure Information

The radiated output power of the device is far below the FCC radio frequency exposure limits. Nevertheless, the device should be used in such a manner that the potential for human contact during normal operation is minimized.

#### Class B digital device

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to other devices, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reduce the separation between the equipment and receiver.
- Consult the dealer for help.

#### Declaration of conformity

See the Internet address on the last page.

#### Legal information

This document complies with the requirements of EU Regulation 2016/425 section 1.4 of Annex II.

#### Notified body

For detailed information see last page.