



Rapid Welding & Industrial Supplies Ltd

Welding Helmet Buying Guide

One of the most essential pieces of equipment when welding is a welding helmet.

The welding helmet plays multiple health and safety roles during the welding process. The correct helmet should provide complete protection, from flying materials to the blinding lights. The purpose of this welding helmet buying guide is to ensure you not only select the correct helmet for your welding applications but for the safety of the welder themselves.

Passive Vs Auto Darkening

A passive lens helmet has a fixed shade, the helmet is worn in the up position while the electrode, gun or torch is positioned. With a quick nod or snap of the neck the operator can flip the helmet into position before striking the arc. For the operator who doesn't weld often they can find it difficult to position and hold the electrode while snapping the helmet into place.

Auto Darkening

Auto darkening helmets allow for wearing during the positioning of the electrode, gun or torch. This is due to the range of shade lowering usually down to shade 3 or 4, allowing for positioning of the welding equipment, whilst the helmet is in place. When the sensors detect the arc, the lens darkens. This can potentially improve weld quality as there is no movement required before welding can commence.

Fixed/ variable shade

On fixed shade auto darkening helmets, when an arc is detected the helmet will automatically change to the shade opted for on the control dial of the helmet, this doesn't mean it's the correct one for the application. If you tend to weld the same application with the same number of amps, this could be the helmet for you. However, if you are continually changing between jobs a variable shade helmet maybe the ideal solution.

Commonly welders do not change the shade for different amps or applications nor do they know exactly what shade they should be on (see table below for correct shades). If you don't know the right shade for your application, then let the helmet choose for you, choose a model of helmet which can detect and automatically select the correct shade level. This is a new Optrel feature which can be found on their E684 and Panoramaxx helmets, this is also known as autopilot lens detection.

		A M P S																							
		0.5	1	2.5	5	10	15	20	30	40	60	80	100	125	150	175	200	225	250	275	300	350	400	450	500
	Stick	Grey							9	10	11			12			13								
	Mild Steel Mig with Argon	Grey										10	11	12			13								
	Mild steel Mig with CO ₂	Grey								10	11	12	13												
	Aluminum Mig	Grey										10	11	12	13										
	Tig	Grey					9	10	11	12	13														
	FCAW	Grey												10	11	12	13								
	Plasma Cutting	Grey										11		12		13									
	Plasma Welding	4	5	6	7	8	9	10	Grey																

Lens Reaction Time

When switching from setting up your weld to the actual welding consider the lens reaction time, in most cases the quicker the better. The more arc's you strike in a day the more you'll appreciate a quicker speed. Some helmets have an adjustable display control, this allows for the lens to stay darker for a period once the arc has stopped, this would be beneficial when welding at high amperages, as molten metal may still emit harmful rays while it cools.

Optical Clarity

The optical clarity defines the quality of view you get through the helmet, you wouldn't buy a cheap pair of sunglasses, so don't let the quality slip when it comes to welding, after all you only get one set of eyes!

Optical clarity is governed by European Standards for the welding industry, the standard is known as EN379. Ratings are determined by tests that measure light transmission across the cartridge as well as lights from the cartridge layers. The ratings are displayed as numbers, each defining an aspect: Optical class (distortion), diffusion of light (blurry image), variations on luminous transmittance (even shade) and angle dependence. Ratings are graded on a scale of 1 to 3 in each class. A score of 1 is perfect, while 3 is the worst rating. So, the perfect clarity score is 1/1/1/1.

Viewing Size

The bigger the better right? Not necessarily in this case! Consider your environment when selecting the viewing size of your helmet. The bigger the viewing size, the bigger the helmet and possibly the heavier the helmet.

Number of Sensors

Helmets usually range from 2 sensors to 4. The more sensors the better coverage, if you are welding in restricted areas sensors could be obstructed, therefore the more the better.

Other Things to Consider

- Availability of cheater lenses
- Power source – Battery powered or battery and solar powered
- Comfort — Ensure the helmet has a good fit or has changeable head gear. When wearing the helmet for longer periods, ensure weight is kept to a minimum.
- Powered Air Purifying Respirator (PAPR) – Do you require a fresh air unit on your helmet or may require one in the future? Check out the availability of an upgrade to a fresh air unit. PAPR are air fed helmets which supply filtered air back into the helmet to ensure the welder does not breathe in welding fumes.

If we've given you too much to think about, don't hesitate to contact our sales team who will be able to assist in selecting the correct welding helmet for you, sales@rapidwelding.com or on +44 (0)23 92 214 214.

Now for the fun bit . . .

Now you've got an idea of the requirements for your desired helmet, let's review some possibilities.

Optrel Crystal

This helmet is one of the most advanced available on the market, it's been a firm favourite amongst our customers since its launch in February. With the crystal lens technology, the welder has a clear view before, during and after welding. The incredibly low shade 2.0 light state provides a practically unclouded view of the working environment eradicating the need for a flip up visor or removal of the helmet between welds. This helmet also benefits from an upgrade to an air fed version for the ultimate protection.

- Crystal lens technology 2.0
- Autopilot, detection of the arc brightness to automatically set the correct shade level (4 to 12)
- Twilight function
- Grind mode
- 3 Arc sensors
- Viewing area: 50 x 100mm
- Weight: 460g
- Optical clarity: 1/1/1/2



[More Information](#)

Weldline Flip Air

The Lincoln Weldline Flip air 4500i with Zephyr Air PAPR system is a great value air fed helmet, providing protection and comfort. It features a flip up helmet with a 4/5-13 wide view auto darkening feature. The battery powered PAPR system is mounted on a cushioned belt to ensure a high level of comfort for extended use.

- ADF with digital display, showing shade and settings
- ADF infotrack system can display useful information such as current time, time on a job, temperature and alarm
- Welding mode shade 9 - 13, Cutting mode, shade 5 - 9 and Shade 4 grind mode
- Low battery indicator
- 4 Optical sensors, X- Mode with magnetic sensors for outside use or low amp Tig welding
- Adjustable shade and sensitivity
- Viewing area: 97 x 60mm
- Weight: 510g
- Optical clarity: 1/1/1/2



[More Information](#)

Lincoln 3350

The Lincoln 3350 is a great value helmet, which has proved to be a very popular option amongst our customers. With its 1/1/1/1 optical class it provides the largest viewing area compared to others at this price point. This helmet comes with a bandana and decal sheet for a personal style.

- Continuously variable 5 - 13 shade with internal control
- Continuously variable sensitivity and delay
- Grind mode
- Magnifying cheater lens capability
- Solar powered with replaceable battery
- 4 Arc sensors
- Viewing area: 95 x 85mm
- Weight: 595g
- Optical clarity: 1/1/1/1



[More Information](#)

Jackson WH25 Duo

The Jackson WH25 Duo auto darkening welding helmet gives welders essential safety at an affordable price. It features a solar powered auto darkening lens with two sensors, with shade 9 - 13 outer adjustment and external grind mode control. Delay and sensitivity adjustment is on the inside of the helmet. Paired with a comfortable and adjustable headband, this great value welding helmet meets EN 379, EN 175 & EN 166 The WH25 Duo can be used for MIG/ARC and Tig (>20A) Processes

- Sensitivity Control
- Adjustable ergonomic headband for better fit and comfort
- Grind Mode
- Delay control
- Shade 9 – 13
- 2 Arc sensors
- Viewing area: 92mm x 41mm
- Optical clarity: 1/1/1/2



[More Information](#)

Still not too sure? Shop the full range of helmets available from Rapid by [clicking here](#)

Try before you buy and see the difference in helmets at our facilities in Portchester, Portsmouth. We have these helmets and many more on display for you to try before you buy.

Alternatively, if we've given you too much to think about or would like some more options to suit your needs please contact our sales team, sales@rapidwelding.com or on +44 (0)23 92 214 214.