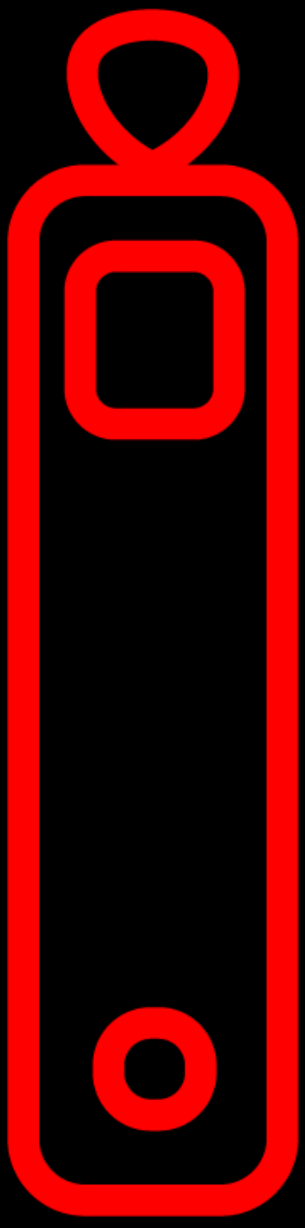
Arclight Ophthalmoscope / Otoscope
User Guide



Arclight Project

Arclight Project

St Andrews Medical Innovations

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LED lights

The Arclight includes 3 LED lights:

1. Warm white light for ophthalmoscope
2. Daylight white light for otoscope / loupe
3. Blue light for loupe and use with sodium fluorescein (NaFl) drops

Robust 'daylight' white LEDs give superb true-colour rendering of external tissues whereas softer 'warm' white light is better for examining the fundus. Because LEDs are low in infrared, ultraviolet, and short-wavelength blue light this gives both a safe and comfortable examination.

Different levels of brightness are available for both white lights.

Warm white light (ophthalmoscope):

- The highest brightness level is ideal for assessing the fundal or red reflex
- Lower brightness level works well for fundoscopy (viewing the back of the eye)

Daylight white light:

- Highest brightness level ideal for otoscopy
- Lower brightness level ideal for using as a loupe to view the anterior segment (front of the eye)

Flashing lights:

- This setting acts as an attraction or fixation target – especially for children

3 Arclight modes

The Arclight has 3 modes (Default, Eye & Ear) – the difference is which lights come on first.

In 'Eye' mode the ophthalmoscope light comes on first, in 'Ear' mode the otoscope light comes on first. In all modes the user can click through the other light combinations to select the one they want. If you leave more than 6 seconds between clicks the lights will turn off at the next click instead of moving to the next light combination.

DEFAULT – 4 light combinations

1. Both white lights (cover one you don't need with your hand)
2. Brighter warm light for ophthalmoscope + blue light for loupe
3. Just otoscope / loupe white light
4. Flashing blue and white lights for loupe

EYE – 7 light combinations

1. Low brightness warm light for ophthalmoscope
2. Medium brightness warm light for ophthalmoscope
3. High brightness warm light for ophthalmoscope
4. Low brightness white light for loupe / otoscope
5. High brightness white light for loupe / otoscope
6. Blue light for loupe
7. Flashing blue and white lights for loupe

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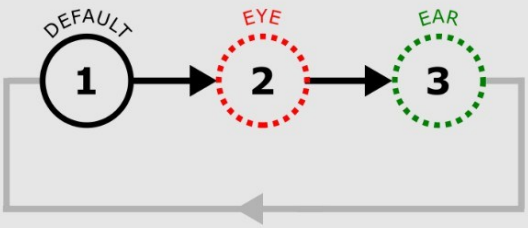
EAR – 7 combinations

1. Medium brightness white light for otoscope / loupe
2. High brightness white light for otoscope / loupe
3. Low brightness white light for otoscope / loupe
4. Low brightness warm light for ophthalmoscope
5. High brightness warm light for ophthalmoscope
6. Blue light for loupe
7. Flashing blue and white lights for loupe

Changing between modes

- Press and hold grey button for 15 seconds
- Release button – light will flash
- Click button once to advance one mode



To advance two modes you will need to follow the process again (i.e. press and hold grey button for 15 seconds then one click once light flashes)

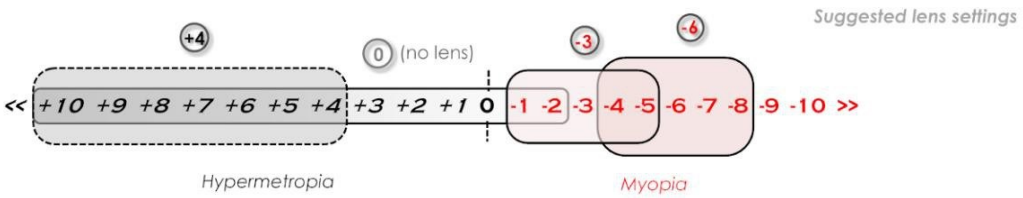
Ophthalmoscope light & lenses

Use the low brightness light to see the macula in smaller undilated pupils or with light sensitive patients. The high beam light is ideal for a wider general examination with larger or dilated pupils.

We recommend leaving the lens slide set to the top (no lens position) as this is most commonly used If the person has glasses or contact lenses it is best to examine through them but the other lenses are also available if the person has uncorrected refractive error.

Lens slide settings:

- Lens slide fully up: sets the 0 (no lens) – best for viewing the fundus of a normally sighted person or when the overall refraction is about -2 and into the plus range.
- Lens slide fully down: sets the +4 lens – ideal to see the media and reflex. It also helps see the fundus of hyperopic eyes easier.
- Between: are two minus lenses (-3 & -6) to get a better view of the fundus of myopes and the dot setting is equal to zero (but the best view for 0 refraction is with no lens at all).



Otoscope

To use as an otoscope push fit a speculum over the daylight white light (small for infants, large for larger children/adults). Hold the Arclight like a pencil – which gives good control when using as an otoscope. Additional specula are available from arclightprojectshop.co.uk.

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Additional Features

Ruler - useful for general measuring including assessing intra-pupillary distance

Pupil size gauge – for assessing difference in pupil size in light and dark conditions

Bird fixation target – for assessing a child's fixation on for example a moving object

Convergence line – for identifying point of convergence

White target – for testing limits of visual field

Red desaturation target – for determining difference in optic nerve function between the two eyes

Ratio scale – to help assess the cup-disc ratio and extent of any optic disc cupping

Colour strip (on side) – to help assess colour vision

Phone clip – attaching to your phone

A. Arclight, phone and clip

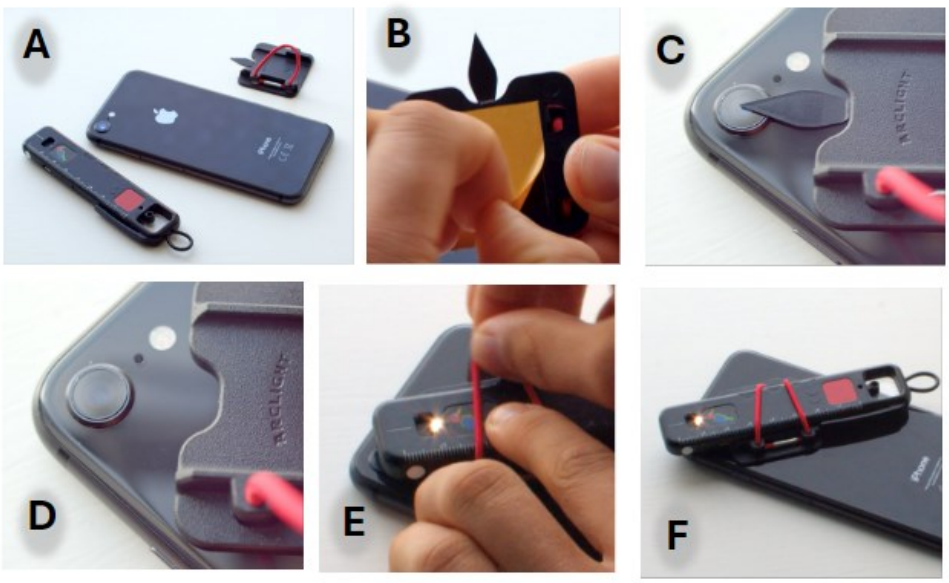
B. Remove paper from sticker and bend the arrow on the clip slightly to weaken the hinge

C. Looking directly from above align the arrow tip with the centre of the camera lens and stick firmly down

D. Remove black arrow

E. Switch Arclight on and attach using the elastic

F. Slide Arclight toward camera aligning sight hole to lens



You can use the phone clip with both the ophthalmoscope and otoscope/loupe ends – just turn the Arclight around to the end that you want.

For ears, switch the camera's auto focus off and manually focus to ~60mm.

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Power & charging

The Arclight can be charged by the solar panel or USB socket. Full charge is achieved in about 20 minutes via the USB or in a few hours in good sunlight.

If totally discharged connecting via USB for just a few minutes will 'revive' it.

A green light is visible when the device is charging (both USB & solar).

Power saving mode

If the Arclight hasn't been used in a few weeks it will enter power saving mode to protect the battery. This will mean the Arclight will need to be put on charge for a few hours before the next use / to revive the battery.

Cloth visual acuity chart

The portable cloth chart has a letters chart on one side which includes both Snellen and LogMAR values along the edges.

On the other side is a tumbling E chart (also with Snellen and LogMAR values) which is particularly useful for small children or those who do not use the Roman alphabet in their first language.

The chart is designed for use at a distance of 3 metres from the patient (which can be estimated through 3 large steps or measured with a tape). The chart can be attached to a notice or magnetic board whilst in use.

User and training videos and FAQs are available at: www.arclightprojectshop.co.uk/instructions

Or use the QR code below:

05/30 -10°C 55°C UK CA CE MD RoHS

EC REP CS Life Sciences Europe Limited, The Black Church, St Mary's Place, Dublin, D074AX, Ireland

St Andrews Medical Innovations Ltd, Walter Bower House, Guardbridge, St Andrews, KY16 0US

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