

Customer reference : FG1551 C1 49 21-142
Gloss black mount
Gloss black clip-on with eclipse viewing lens
ORLAB reference : 23203.2
ORLAB method : ORLAB 2.53.3
Date of issue : 7 November 2023
Date tested : 3 November 2023

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EVALUATION TESTS TO ISO 12312-2:2015
Eye and face protection – Sunglasses and related eyewear
Part 2: Filters for direct observation of the sun

Submitted for test by : Halo Eclipse Inc.
Supplier : Halo Eclipse Inc.
Manufacturer : Not supplied
Identifier : 23203-2

DESCRIPTION OF SAMPLE

	Material	Colour(s)			
Clip-on	Plastic	Gloss black with rear magnets			
Mount	Plastic	Gloss black with front magnets			
Sides	Plastic	Gloss black			
Side ends	None	N/A			
	Material	Colour(s)	Tint	Type	Coating
Filters	Plastic	Black	Uniform	Non-polarising	Silver reflective
Markings	Front	None			
	Filters	None			
Mount	Right side	Inside	Refer to photos		Outside HALO
	Left side	Inside	Refer to photos		Outside HALO
Packaging	Refer to photos				
Stick on label	None				
Swing-tag	None				

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Clip on sample (eclipse viewing lens)



Sample mount (clear lens):



HOW TO USE YOUR HALO ECLIPSE SPECTACLES
Stay safe while Sun-gazing with Halo! Wear them during any solar observation, if you can see even a tiny bit of the Sun. Do not use them with other products like cameras, binoculars, or telescopes. Halos with lens damage or frame separation should be discarded. Keep Halos away from kids unless supervised by an adult. Always follow these instructions to avoid serious or permanent eye injury.

HOW TO STORE YOUR HALO ECLIPSE SPECTACLES
To keep your Halos in top condition, follow these tips: check for scratches, punctures, or any damage before storing them; use the Halo microfibre cloth or soft, nonabrasive tissues to clean the lenses; store HALOs at room temperature in the original case or any container that can protect the glasses from scratches and punctures. With proper care and storage, your Halos will last indefinitely so you can use them for many solar adventures to come.

HALO
ECLIPSE SPECTACLES

See the Sun like never before with Halo! Our glasses are ISO 12312-2:2015 compliant, "CE" certified, and meet safety standards EN 169/1992 & AS/NZS 1338.1:1992 for direct solar viewing. Made by awesome folks at HaloEclipse, Inc. in Las Vegas, NV. Learn more at www.haloclipse.com and @shophaloclipse on insta.

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SECTION 4 Requirements and associated test methods

4.1 Transmittance

4.1.1 General

See below

4.1.2 Uniformity of luminous transmittance

Pass

Sample No.	Maximum	Minimum	23203-2-R	23203-2-L	Compliance
τ_v (%)	0.0032	0.000061	0.00055	0.00055	Pass
280-315nm (%)	τ_v		<0.00001	<0.00001	Pass
315-380nm (%)	τ_v		<0.00001	<0.00001	Pass
780-2000nm (%)	3.0		<0.03	<0.03	Pass

4.2 Material and surface quality

4.2.1 Requirements

Pass

4.3 Mounting

4.3.1 General

Pass

4.3.2 Dimensions

Pass

4.3.3 Material quality

Pass

SECTION 5 Labelling

The filter and/or its packaging shall show the following information in the language(s) of the country where the product is to be offered for sale:

- (a) name and address of manufacturer of the product 'HALO' present
- (b) instructions for use in looking at the sun or a solar eclipse Present
- (c) warnings that viewing the sun without an appropriate filter can result in permanent eye injury Not present

EXAMPLE "Direct viewing of the sun is dangerous if the proper precautions are not taken. Adequate eye protection specifically designed for viewing the sun is essential and shall be worn so that no direct radiation from the sun can reach the eye other than that passing through the filter."

- (d) warnings that filters that are damaged or separated from their mountings should be discarded; Present
- (e) advice on storage, cleaning and maintenance, as appropriate; Present
- (f) obsolescence deadline or period of obsolescence, as appropriate Not present

These filters DO meet the test requirements of ISO 12312-2:2015.



Ashley Ang
Authorised Signatory

Notes: The uncertainties stated in this report have been calculated in accordance with principles in the ISO Guide to the Expression of Uncertainty in measurement, and give intervals estimated to have a level of confidence of 95%. A coverage factor (k) of 2.0 was used.

The following least uncertainties for the measurements reported have been taken into account when assessing compliance:

Luminous transmittance	±0.1%	Q factors	±0.01
Refractive power	±0.005 D	Prismatic power	±0.01 Δ
Scattered light	±0.1%	Axis of polarisation	±0.5°
Uncertainties in UV transmittance comply with ISO 12311:2013, Clause 7.1.1.1 and Table 1.			

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