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Your reference : 9156W-XL – Clear (SG-500)
Our reference : 12527.1
ORLAB method: ORLAB 2.53
Date of issue : 04 January 2013
Date tested : 03 January 2013

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EVALUATION TESTS TO AS/NZS 1337.1:2010
Part 1: Eye and face protectors for occupational applications

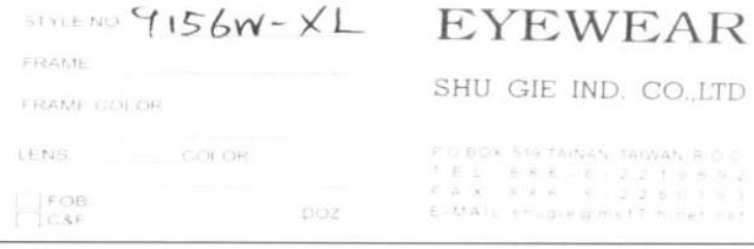
Submitted for test by : Shu Gie Industrial Co. Ltd
Supplier : Shu Gie Industrial Co. Ltd
Manufacturer : Shu Gie Industrial Co. Ltd
Identifier : 12527-1-(1-3)

DESCRIPTION OF SAMPLES

	Material	Colour(s)
Frame front	Plastic (moulded)	Clear
Temples	Plastic	Clear with vertical vents and a small circular hole at both temple tips
Temple ends	None	None

	Material	Colour(s)	Tint	Type	Coating
Filters / Oculars	Plastic one piece	Clear	Uniform	Non-polarising	Unknown

Markings	**Front**	None			
	Filters / Oculars	None			
	Right temple	**Inside**	None	**Outside**	None
	Left temple	**Inside**	None	**Outside**	None

Packaging	None
Swing-tag	

SECTION 2 REQUIREMENTS FOR OCULARS

2.2 GENERAL REQUIREMENTS FOR OCULARS

2.2.1 Finish — Pass

2.2.2 Materials — Pass

2.2.3 Dimensions of oculars — Pass

2.3 MATERIAL REQUIREMENTS

2.3.1 Visual quality — Pass

2.3.2 Viewing area — Pass

2.4 OPTICAL PROPERTIES OF OCULARS

2.4.1 Position of measurement — As per the Standard

2.4.2 Direction of measurement — As per the Standard

2.4.3 Transmittance properties — See Clause 2.4.4

2.4.4 Transmittance requirements

2.4.4.1 *General*

Luminous transmittance (average of 3 pairs of oculars)

Luminous transmittance (τ_v)			92.2%	Category 0 and Outdoor untinted	
Category 0	over 80%	to	100%		
Category 1	over 43%	to	80%		
Category 2	over 18%	to	43%		
Category 3	over 8%	to	18%		
Outdoor untinted	over 80%	to	100%		

Ultraviolet spectral transmittance

280-315nm	Measured spectral transmittance		<0.1%	
	Maximum	Category 0 – 2	0.05 τ_v	Pass
		Category 3	0.01 τ_v	N/A
		Outdoor untinted	0.01 τ_v	Pass
315-350nm	Measured spectral transmittance		<0.1%	
	Maximum	Category 0 – 2	τ_v	Pass
		Category 3	0.50 τ_v	N/A
		Outdoor untinted	0.25 τ_v	Pass
315-380nm	Measured mean transmittance		<0.1%	
	Maximum	Category 0 – 2	τ_v	Pass
		Category 3	0.50 τ_v	N/A
		Outdoor untinted	0.25 τ_v	Pass

Spectral transmittance

470-650nm	Measured spectral transmittance		0.96 τ_v	Pass
	Minimum		0.20 τ_v	

Relative visual attenuation for signal light detection (Q) – standard source

Red	Minimum	0.80	Measured	1.01	Pass
Yellow	Minimum	0.80	Measured	1.00	Pass
Green	Minimum	0.80	Measured	1.00	Pass
Blue	Minimum	0.80	Measured	1.00	Pass

Relative visual attenuation for signal light detection (Q) – LED source (informative purposes only)

Red	Minimum	0.80	Measured	1.00	Pass
Yellow	Minimum	0.80	Measured	0.98	Pass
Green	Minimum	0.80	Measured	1.00	Pass
Blue	Minimum	0.80	Measured	1.00	Pass

2.4.4.2	*Claims of luminous transmittance*	No claims made
2.4.5	**Other transmittance requirements**	
2.4.5.1	*Uniformity of luminous transmittance of uniformly tinted filters*	Pass
2.4.5.2	*Transmittance matching for pairs of filters of all types*	Pass
2.4.5.3	*Uniformity of colour for pairs of filters of all types*	Pass
2.4.6	**Special transmittance requirements**	
2.4.6.1	*Photochromic filters*	N/A
2.4.6.2	*Polarizing filters*	N/A
2.4.6.3	*Gradient filters*	N/A
2.4.6.4	*Outdoor use, untinted filters*	No claims made
2.4.7	**Refractive power of oculars**	
2.4.7.1	*Spherical and astigmatic power*	Pass
2.4.7.2	*Local aberrations in spherical and astigmatic power*	Not required
2.4.7.3	*Prismatic power – Individual oculars*	N/A
2.4.7.4	*Prismatic power difference – Pairs of oculars*	Pass

2.4.8	**Scattered Light**	<0.2%	
	Maximum	3.0%	Pass
2.4.9	**Material and surface quality**		Pass

Clauses 2.5 to 2.13 see Clauses 3.2.7, 3.3.1 to 3.3.3 and 3.5

SECTION 3 REQUIREMENTS FOR ASSEMBLED EYE AND FACE PROTECTORS

3.2	**GENERAL REQUIREMENTS**	
3.2.1	**Finish**	Pass
3.2.2	**Materials**	Pass
3.2.3	**Optical properties of oculars**	See Clauses 2.1 to 2.4
3.2.4	**Ventilation**	N/A
3.2.5	**Dimensional requirements for eye-shields and face-shields**	N/A
3.2.6	**Assessment of lateral coverage** (in addition to Clause 2.2.3)	Pass
3.2.7	**Impact resistance** (to Clause 2.5, as per Appendix K)	Pass
3.2.8	**Penetration resistance** (to Clause 2.9, as per Appendix P) (plastic oculars only)	Pass

3.2.9	**Resistance to ignition** (to Clause 2.10, as per Appendix Q) (oculars for welding, wide-vision goggles, eye-shields, face-shields and hoods)	N/A
3.2.10	**Thermal stability** (as per Appendix T)	Pass
3.2.11	**Protection against corrosion** (as per Appendix U) (eye and face protectors with metal components only)	N/A
3.3	**SPECIAL PERFORMANCE REQUIREMENTS**	
3.3.1	**Medium impact protectors** (to Clause 2.6, as per Appendix M)	Pass
3.3.2	**High impact protectors** (to Clause 2.7, as per Appendix N)	N/A
3.3.3	**Extra high impact protectors** (to Clause 2.8, as per Appendix O)	N/A
3.3.4	**Protection against splashes** (as per Appendix V)	N/A
3.3.5	**Protection against dust** (as per Appendix W)	N/A
3.3.6	**Protection against gas** (as per Appendix X)	N/A
3.3.7	**Protection against hot solids** (to Clause 2.11.2, as per Appendix S)	N/A
3.3.8	**Protection against high temperature** (as per Appendix Y)	N/A
3.5	**MARKING OF ASSEMBLED EYE AND FACE PROTECTORS AND PACKAGING**	
3.5.1	**Eye and face protectors**	
(a)	Manufacturer's name, trade name or mark	Absent
(b)	Ocular marking as given Section 2 of this Standard	Absent
(c)	Appropriate marking as given in Table 7	See (b)
3.5.2	**Packaging**	
(a)	Type of protector as given in Table 7	Not provided
(b)	Appropriate marking as given in Table 8	Not provided

SECTION 4 OPTIONAL TESTS AND CLAIMS

4.1	**CLAIMED TRANSMITTANCE PROPERTIES**	No claims made
4.2	**FLAME PROPAGATION**	No claims made

These eye protectors DO meet the medium impact, category 0 and outdoor untinted requirements of AS/NZS 1337.1, provided they are fully and correctly marked as the standard requires.

The Standard requires the following information to be etched or impressed into these eye protectors:

a) Manufacturer's name, trade name or mark on the front/ocular and on the temples.
b) These eye protectors may be marked "O" to indicate outdoor use, untinted.
c) If these eye protectors are for medium impact protection they must be marked "I" or "F".

The Standard requires the following information to be supplied with the packaging for these eye protectors:

a) Medium impact eye protector.
b) 'Untinted' or 'Outdoor untinted' ocular.

Brian Cheng
Authorised Signatory

Thao Ngo
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	±0.005D	Prismatic power	±0.01D
Scattered light	±0.1%	Axis of polarisation	±0.5°
Spectral transmittance	±0.2%		

Uncertainties in UV transmittance comply with EN 168