



TEST REPORT

Applicant: Guilin Refine Medical Instrument Co., LTD
Address: NO.8-3, Information Industrial Park, High-Tech Zone, Qixing District, Guilin, Guangxi, 541004, P.R.China

Report No: C80202008
Date: April 7, 2020

Attn: Chen Ju Dong
Sample Description : Face Shield
Submitted sample(s) said to be : 20 pieces
Item No. : A
Device Type: Face Shield
Material : Polymer material
Frame Color : Transparent
Lens Color : Transparent
Lenses Type : Uniform
P.O. No. : Not Provided
Age Grade : Not Provided
Supplier : Guilin Refine Medical Instrument Co., LTD
Buyer : Not Provided
Goods exported to : Not Provided
Country of origin : Not Provided
Date(s) of samples received : March 26, 2020
Date of Test Period : March 26, 2020 – April 7, 2020

For and on behalf of :
UL VS Shanghai Limited Shenzhen Branch

Hedy Li

Hedy Li
Consumer Engineering Manager
Eyewear Testing Department



Important Notes :
The results only relate to the samples tested.

EN166 testing report

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ISZ-FAF-001 (2017-10-12)

UL VS Shanghai Limited Shenzhen Branch
3-4F Qingyi Supermask Photoelectricity Building, No.8 Langshan 2nd Road,
North High-Tech Industrial Park, Nanshan District, Shenzhen, P.R. China

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Product Photo:



Conclusion:

Tested Samples
Tested components of submitted samples

Standard

EN 166: 2001 Personal eye - protection - Specifications
EN 167: 2001 Personal eye - protection - Optical test methods
EN 168: 2001 Personal eye - protection - Non-optical test methods

Result
PASS

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UL VS-AE-001 (2017-10-12)



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Report No: C80202008
Date: April 7, 2020

TEST RESULTS

Note: The applicant's attention was drawn that the manufacturer should not use the frame materials which are known to cause irritation, allergic or toxic reaction during wear in a normal state of health against significant proportion of users.

Requirement			Testing		Results ¹		
Test Items		According to Clause		According to			
		EN	Clause	EN		Clause	
General construction			166	6.1	--	--	P
Materials (Nickel release)			166	6.2	--	--	NA
Headbands			166	6.3	--	--	P
Field of vision			166	7.1.1	168	18	P
Refractive powers (Unmounted oculars covering one eye)	Spherical refractive powers	166	7.1.2.1.1	167	3.1	NA	
	Astigmatic refractive powers						
	Prismatic refractive powers						
Refractive powers (Mounted oculars and covering both eyes)	Spherical refractive powers	166	7.1.2.1.2	167	3.2	Optical Class 1	
	Astigmatic refractive powers						
	Prismatic refractive powers						
Transmittance	Oculars without filtering action	166	7.1.2.2.1	167	6	P	
	Oculars with filtering action	166	7.1.2.2.2	167	6	NA	
	Ultraviolet Filter	170	4	167	6	NA	
	Sunglare Filter for Industrial Use	172	4.1	167	6	NA	
Variations in transmittance (Exempt oculars without filtering action)	Oculars without corrective effect	166	7.1.2.2.3.1	167	7	NA	
	Oculars with corrective effect	166	7.1.2.2.3.2	167	7	NA	

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SZ-FAF-001 (2017-10-12)



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Report No: C80202008
Date: April 7, 2020

TEST RESULTS

Requirement			Testing		Results		
Test Items		According to Clause		According to			
		EN	Clause	EN		Clause	
Diffusion of light			166	7.1.2.3	167	4	P
Quality of material and surface			166	7.1.3	167	5	P
Minimum robustness ²			166	7.1.4.1	168	4	NA
Increased robustness	Unmounted oculars		166	7.1.4.2.1	168	3.1	NA
	Complete eye-protectors and frame		166	7.1.4.2.2	168	3.2	P
Stability at an elevated temperature			166	7.1.5.1	168	5	P
Resistance to ultraviolet radiation (oculars only)			166	7.1.5.2	168	6	P
Resistance to corrosion (All metal parts only)			166	7.1.6	168	8	NA
Resistance to ignition			166	7.1.7	168	7	P
Protection against high-speed particles			166	7.2.2	168	9	NA
Protection against droplets and splashes			166	7.2.4	168	12	P
Lateral protection			166	7.2.8	168	19	P
Resistance to fogging of oculars			166	7.3.2	168	16	P
Information supplied by the manufacturer & Marking			166	9 & 10	--	--	P

Remarks: 1. P = Pass; F = Fail; NA = Not Applicable; NR= Not require; X=Checked.

2. This requirement relates only to cover plates and oculars with filtering effect and not be assessed if these items are intended to meet the requirements for increased robustness or resistance to high speed particles, in which case the requirements of 7.1.4.2 or 7.2.2 shall be met.

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TEST RESULTS

General construction — Clause 6.1

Sample No.	General construction		Headbands				Comment	Result(s)
	Defects		Width		Adjustable			
	Observed	Absent	Pass	Fail	Yes	No		
01~03		X	X		X		--	P
Requirements:								
1. General construction: Eye-Protectors shall be free of projections, sharp edges or other defects which are likely to cause discomfort or injury during use.								
2. Headbands: shall be at least 10mm wide over any portion which may come into contact with the wearer's head ,and shall be adjustable or self-adjusting:								

Field of vision — Clause 7.1.1 / EN 168:2001 Clause 18

Sample No.	Head-form		Exhibit minimum field of vision defined in the standard		Comment	Result(s)
	Medium	Small	Yes	No		
01~03	X		X		--	P
Requirements: Eye-Protectors shall be exhibit field of vision an area of not less than 22 mm in the horizontal length and 20mm in the vertical width in front of each eye.						

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TEST RESULTS

Refractive powers— Clause 7.1.2.1 .2 / EN 167:2001 Clause 3.2

Sample No.	Refractive powers				Difference in prismatic refractive powers (cm/m)			Result(s)
	Spherical (m ⁻¹)		Astigmatic (m ⁻¹)		Horizontal		Vertical	
	Left	Right	Left	Right	Base Out	Base In		
01	0.00	0.00	0.00	0.00	0.10	--	0.00	Optical class 1
02	0.00	0.00	0.00	0.00	0.10	--	0.05	
03	0.00	0.00	0.00	0.00	0.05	--	0.05	

Requirement: Permissible tolerances for refractive powers :

Optical class 1	±0.06	0.06	0.75	0.25	0.25
Optical class 2	±0.12	0.12	1.00	0.25	0.25
Optical class 3	+0.12~-0.25	0.25	1.00	0.25	0.25

Measurement Uncertainty (if necessary):

Transmittance (without filtering action) — Clause 7.1.2.2/ EN 167:2001 Clause 6

Sample No.	Requirements	Luminous Transmittance, τ_v (%)		Result(s)
		Left	Right	
01	$\tau_v > 74.4\%$	89.0	89.5	P
02		88.3	88.6	P
03		88.6	88.8	P

Measurement Uncertainty (if necessary):

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TEST RESULTS

Refractive powers— Clause 7.1.2.1 .2 / EN 167:2001 Clause 3.2

Sample No.	Refractive powers				Difference in prismatic refractive powers (cm/m)			Result(s)
	Spherical (m ⁻¹)		Astigmatic (m ⁻¹)		Horizontal		Vertical	
	Left	Right	Left	Right	Base Out	Base In		
01	0.00	0.00	0.00	0.00	0.10	--	0.00	Optical class 1
02	0.00	0.00	0.00	0.00	0.10	--	0.05	
03	0.00	0.00	0.00	0.00	0.05	--	0.05	

Requirement: Permissible tolerances for refractive powers :

Optical class 1	±0.06	0.06	0.75	0.25	0.25
Optical class 2	±0.12	0.12	1.00	0.25	0.25
Optical class 3	+0.12~-0.25	0.25	1.00	0.25	0.25

Measurement Uncertainty (if necessary):

Transmittance (without filtering action) — Clause 7.1.2.2/ EN 167:2001 Clause 6

Sample No.	Requirements	Luminous Transmittance, τ_v (%)		Result(s)
		Left	Right	
01	$\tau_v > 74.4\%$	89.0	89.5	P
02		88.3	88.6	P
03		88.6	88.8	P

Measurement Uncertainty (if necessary):

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Diffusion of light — Clause 7.1.2.3 / EN 167:2001 Clause 4

Sample No.	Samples type	Diffusion of light (cd/m ²) / lx		Result(s)
		Left	Right	
01	III	0.15	0.14	P
02		0.16	0.09	P
03		0.14	0.07	P

Requirements:

The maximum value of the reduced luminance factor shall be :

I 1.00(cd/m²) / lx for welding filter;

II 0.75(cd/m²) / lx for oculars used in eye-protectors against high speed particles;

III 0.50 (cd/m²) / lx for all other oculars;

Measurement Uncertainty (if necessary):

Quality of material and surface — Clause 7.1.3 / EN 167:2001 Clause 5

Sample No.	Defects		Comment	Result(s)
	Observed	Absent		
01~03		X	--	P
Requirements: Except in a marginal area 5 mm wide, oculars shall be free from any significant defects likely to impair vision in use, such as bubbles, scratches, inclusions, dull spots, pitting, mould marks, scouring, grains, pocking, scaling and undulation.				

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Increased robustness — Clause 7.1.4.2 / EN 168:2001 Clause 3.1

Sample No.	Test temperature (°C)	Test position	Defects		Comment	Result(s)
			Observed	Absent		
04~05	55	Left Frontal		X	--	P
06		Left Lateral		X	--	P
07~08	-5	Left Frontal		X	--	P
09		Left Lateral		X	--	P
04~05	55	Right Frontal		X	--	P
06		Right Lateral		X	--	P
07~08	-5	Right Frontal		X	--	P
09		Right Lateral		X	--	P
Requirements:						
The following defects shall not occur:						
1. ocular fracture:						
2. Ocular deformation;						

Stability at an elevated temperature — Clause 7.1.5.1 / EN 168:2001 Clause 5

Sample No.	Apparent deformation		Comment	Result(s)
	Observed	Absent		
04~06		X	--	P
Requirements: Assembled eye-protectors shall show no apparent deformation;				

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UL EAF-001 (2017-10-12)



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TEST RESULTS

Resistance to ultraviolet radiation (oculars only) — Clause 7.1.5.2 / EN 168:2001 Clause 6

Samples type		Sample No.					
Oculars used in eye-protectors against high speed particles		01		02		03	
Test Items		Left	Right	Left	Right	Left	Right
The relative change of luminous transmittance (%)	Before Expose	89.0	89.5	88.3	88.6	88.6	88.8
	After Expose	89.8	89.8	89.2	89.9	89.7	89.9
	Difference	0.9	0.3	1.0	1.5	1.2	1.2
Reduced scattered light coefficient (cd/m ²) / lx	Before Expose	0.15	0.14	0.16	0.09	0.14	0.07
	After Expose	0.25	0.25	0.16	0.08	0.16	0.15
Result(s)		P		P		P	
Requirements:							
1. The relative change of luminous transmittance				2. Reduced scattered light coefficient			
Luminous transmittance		Permissible relative change (%)		The maximum value of the reduced luminance factor shall be:			
Less than (%)	Up to (%)						
100	17.8	±5		- 1.00(cd/m ²) / lx for welding filter;			
17.8	0.44	±10		- 0.75(cd/m ²) / lx for oculars used in eye-protectors against high speed particles;			
				- 0.50 (cd/m ²) / lx for all other oculars;			

Measurement Uncertainty (if necessary):

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SZ-FAR-001(2017-10-12)

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TEST REPORT

Applicant: Guilin Refine Medical Instrument Co., LTD
Address: NO.8-3, Information Industrial Park, High-Tech Zone, Qixing District, Guilin, Guangxi, 541004, P.R.China

Report No: C80202008
Date: April 7, 2020

TEST RESULTS

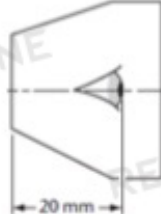
Resistance to ignition — Clause 7.1.7 / EN 168:2001 Clause 8

Sample No.	Continued combustion		Comment	Result(s)
	Yes	No		
04~06		X	--	P
Requirements: Eye-protectors shall be considered to be satisfactory if no parts ignites or continues to glow after removal of the steel rod.				

Protection against chemical droplets — Clause 7.2.4 / EN 168:2001 Clause 12

Sample No.	Shows a Crimson		Comment	Result(s)
	Observed	Absent		
12~14		X	--	P
Requirements: Shall be considered to be satisfactory if no spray solution penetrate goggles.				

Lateral Protection — Clause 7.2.8 / EN 168:2001 Clause 19

Sample No.	Lateral region coverage		Comment	Result(s)
	Pass	Fail		
01~03	X		--	P
Requirements: Eye-protectors claimed to lateral protection shall pass the lateral region coverage. These region being a 20mm wide with 10 mm radial ends struck from the front and side impact points (See figure 1)			Figure 1: 	



TEST REPORT

Applicant: Guilin Refine Medical Instrument Co., LTD
Address: NO.8-3, Information Industrial Park, High-Tech Zone, Qixing District, Guilin, Guangxi, 541004, P.R.China

Report No: C80202008
Date: April 7, 2020

TEST RESULTS

Resistant to Fogging of Oculars — Clause 7.3.2/ EN 168:2001 Clause 16

Sample No.	Position	After Fogging Test Evaluation		Comment	Result
		Fogging	Free Fogging		
10	Left		X	--	P
	Right		X	--	P
11	Left		X	--	P
	Right		X	--	P

Requirements:

If oculars are described as resistant to fogging they shall remain free from fogging for a minimum of 8s.

Information supplied by the manufacturer & Marking — Clause 9&10

Sample No.	Observed Result		Comment	Result
	Meet	No Meet		
01	X		--	P

Requirements:

The manufacturer shall be provide with each eye-protector at least the following information:

- Name and address of the manufacturer
- The number of this standards
- The eye-protector model identification
- Instructions for storage, use and maintenance
- Specific instructions for cleaning and disinfection
- Details of the final of use, protection capabilities and performance characteristics
- The significance of making on the frame and the ocular
- A warning concerning the compatibility of marking

***** End of report *****

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SZ-FAP-001 (2017-10-12)

