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CERTIFIED TRANSLATION FROM THE POLISH LANGUAGE

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[*Page 1*]-/-

[*Logo*] ilac-MRA-/-

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CENTRAL INSTITUTE FOR LABOUR PROTECTION – NATIONAL RESEARCH INSTITUTE-/-

ul. Czerniakowska 16, 00-701 Warszawa-/-

PERSONAL PROTECTIVE EQUIPMENT DIVISION-/-

EYE AND FACE PROTECTION UNIT-/-

TEST REPORT-/-

Order no.:	646/PB-COV/2020/NO-/-
Subject of the order:	Testing of face protection-/-
Customer:	MOBIMODS Sp. z o.o.-/- ul. Białoskórnicza 15-16/1, 50-134 Wrocław-/-
Test report issue date:	[*handwritten inscription*] 2020-09-06-/-
Head of testing:	Krzysztof Płachta [*illegible signature*]
Authorized by:	Grzegorz Owczarek-/- [*illegible signature*]-/-
Approved by:	[*illegible signature and stamp:*] Head of Testing and Calibration Laboratories Complex, mgr [*T. n.: MSc*] Karolina Burza-/-

Copy No 1-/-

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This test report includes the results of tests covered by accredited and non-accredited tests. Results of the tests beyond the scope of accreditation are marked with (*).-/-

F01-PORG-11 of 2020-04-27-/-

TESTING OF FACE PROTECTION-/-

1. **Tested items**-/-
   Face protection (face shield) MOT-5 — 15 specimens-/-
2. **Date of receipt of test items**-/-
   2020-05-19-/-
   Specimen record number: 76/2020-/-
3. **Test date**-/-
   2020-06-03-/-
4. **Statement**-/-
   4.1. Test results included in the report are only applicable to the submitted specimens.-/-
   4.2. Without the written consent of CIOP-PIB, the report cannot be copied in parts but only in its entirety.-/-
   4.3. The report is composed of 8 pages.-/-
5. **Scope of tests**-/-

Accredited tests:-/-

- Quality of the optical material and its surface PN-EN 167:2005-/-
- Spherical refractive power PN-EN 167:2005-/-
- Astigmatism PN-EN 167:2005-/-
- Prismatic power difference PN-EN 167:2005-/-
- Reduced luminance coefficient of light scattering PN-EN 167:2005-/-
- Light transmission coefficient, spectral transmission coefficients for ultraviolet PN-EN 167:2005--
- Resistance to ultraviolet radiation PN-EN 167:2005, PN-EN 168:2005-/-
- Heat resistance PN-EN 168:2005-/-
- Increased impact resistance PN-EN 168:2005-/-
- Resistance to impact of high-velocity projectiles PN-EN 168:2005-/-
- Flame resistance PN-EN 168:2005-/-

Non-accredited tests:-/-

- Field of view PN-EN 168:2005-/-
- Liquid splash protection PN-EN 168:2005-/-

6. **Place of performing tests:**-/-
   Eye and Face Protection Unit-/-
   CIOP-PIB, ul. Wierzbowa 48, 90-133 Łódź.-/-

7. Test results-/-

The test results are presented below.-/-

Quality of the optical material and its surface-/-

Examined property	Specimen number					Requirement acc. to PN-EN 166:2005	Assessment of meeting/ not meeting the requirement
	1	2	3	4	5		
Dents	no	no	no	no	no	Except for the 5-mm wide edge area, there is no damage that could affect vision.	Meets the requirements of the PN-EN 166:2005 standard, item 7.1.3
Bubbles	no	no	no	no	no		
Cracks	no	no	no	no	no		
Inclusions	no	no	no	no	no		
Fogging	no	no	no	no	no		
Pits	no	no	no	no	no		
Mould impressions	no	no	no	no	no		
Scratches	no	no	no	no	no		
Grain	no	no	no	no	no		
Pinholes	no	no	no	no	no		
Spalling	no	no	no	no	no		
Surface undulation	no	no	no	no	no		

Spherical refractive power-/-

Specimen number	Refractive power with clear vision of the image of [m^{-1}]		Spherical refractive power of the specimen [m^{-1}]	Requirement acc. to PN-EN 166:2005	Assessment of meeting/not meeting the requirement
	test horizontal bars	test vertical bars			
1	0.01	0.01	0.01	±0.06 [m^{-1}]	Meets the requirements of the PN-EN 166:2005 standard, item 7.1.2.1.2 for optical execution in 1st grade
2	0.01	0.01	0.01		
3	0.01	0.01	0.01		
Average value of the spherical refractive power of the specimen			0.01		

Astigmatism-/-

Specimen number	Refractive power with clear vision of the image of [m^{-1}]		Astigmatism [m^{-1}]	Requirement acc. to PN-EN 166:2005	Assessment of meeting/not meeting the requirement
	test horizontal bars	test vertical bars			
1	0.01	0.01	0.00	0.06 [m^{-1}]	Meets the requirements of the PN-EN 166:2005 standard, item 7.1.2.1.2 for optical execution in 1st grade
2	0.01	0.01	0.00		
3	0.01	0.01	0.00		
Average value of the spherical refractive power of the specimen			0.00		

Prismatic power difference-/-

Item		Specimen number			Requirement acc. to PN-EN 166:2005	Assessment of meeting/not meeting the requirement
		4	5	6		
Prismatic power	"inside base"	no	no	no	For 1st grade: less than 0.75 [cm/m] outside the base horizontally	Meets the requirements of the PN-EN 166:2005 standard, item 7.1.2.1.2
	"outside base"	yes	yes	yes		
Prismatic power difference [cm/m]	horizontally	0.30	0.30	0.30		
	vertically	0	0	0		

Reduced luminance coefficient of light scattering-/-

Specimen number	Reduced luminance coefficient of light scattering [cd(m2 x lx)]	Requirement acc. to PN-EN 166:2005	Assessment of meeting/not meeting the requirement
6	0.28	$0{,}75\ \frac{cd}{m^2 \cdot lx}$	Meets the requirements of the PN-EN 166:2005 standard, item 7.1.2.3
7	0.27		
8	0.25		

Light transmission coefficient, spectral transmission coefficients for ultraviolet-/-

Specimen number	Light transmission coefficient [%]	Requirement acc. to PN-EN 166:2005	Assessment of meeting/not meeting the requirement
6	89.68	The light transmission coefficient should be higher than 74.4%.	Meets the requirements of the PN-EN 166:2005 standard, item 7.1.2.2.1
7	89.58		
8	89.64		

Resistance to ultraviolet radiation-/-

Specimen number	Reduced luminance coefficient of light scattering after exposure	Requirement acc. to PN-EN 166:2005	Assessment of meeting/not meeting the requirement
3	0.44	$0{,}75\ \frac{cd}{m^2 \cdot lx}$	Meets the requirements of the PN-EN 166:2005 standard, item 7.1.5.2
4	0.42		
5	0.43		

Resistance to ultraviolet radiation-/-

Specimen number	Light transmission coefficient before exposure [%]	Light transmission coefficient after exposure [%]	Relative change of the light transmission coefficient [%]
6	89.68	89.16	0.57
7	89.58	88.99	0.66
8	89.64	89.22	0.47
Requirement acc. to PN-EN 166:2005		After exposure, the permitted relative change of the light transmission coefficient is: - ±5% for the light transmission coefficient between 100% and 17.8%	
Assessment of meeting/not meeting the requirement		Meets the requirements of the PN-EN 166:2005 standard, item 7.1.5.2	

Heat resistance-/-

Specimen number	Examined property	Requirement acc. to PN-EN 166:2005	Assessment of meeting/not meeting the requirement
	Visible deformation of the face shield		
6	no	The assembled eye protectors should not have visible deformations.	Meets the requirements of the PN-EN 166:2005 standard, item 7.1.5.1
7	no		
8	no		

Increased resistance to impact of a steel ball travelling at 5.1 m/s-/-

Examined property	Specimen number[1)]								Requirement acc. to PN-EN 166:2005	Assessment of meeting/not meeting the requirement
	1, 2	3, 4	5, 6	7, 8	9	10	11	12		
Protective glass breaking	no	no	no	no	no	no	no	no	The following damage should not occur: glass breaking, glass deformation, frame or mounting deformation.	Meets the requirements of the PN-EN 166:2005 standard, item 7.1.4.2
Protective glass deformation	no	no	no	no	no	no	no	no		
Protective glass frame breaking	no	no	no	no	no	no	no	no		

[1)]Specimens: *1, 2 — impact onto the "left eye, front" point, specimen conditioned at (+55±2)°C-/-*

3, 4 — impact onto the "left eye, front" point, specimen conditioned at (-5±2)°C-/-

5, 6 — impact onto the "right eye, front" point, specimen conditioned at (+55±2)°C-/-

7, 8 — impact onto the "right eye, front" point, specimen conditioned at (-5±2)°C-/-

9 — impact onto the "left eye, side" point, specimen conditioned at (+55±2)°C-/-

10 — impact onto the "left eye, side" point, specimen conditioned at (-5±2)°C-/-

11 — impact onto the "right eye, side" point, specimen conditioned at (+55±2)°C-/-

12 — impact onto the "right eye, side" point, specimen conditioned at (-5±2)°C-/-

Resistance to impact of high-velocity projectiles using a steel ball, impact speed of 45 m/s-/-

Examined property	Specimen number[1)]				Requirement acc. to PN-EN 166:2005	Assessment of meeting/not meeting the requirement
	1, 2, 3, 4	5, 6, 7, 8	9, 10	11, 12		
Protective glass breaking	no	no	no	no	The following damage should not occur: glass breaking, glass deformation, frame or mounting deformation. The side cover of the protection is sufficient, if it protects against the bar contact in the vicinity of the impact points.	Meets the requirements of the PN-EN 166:2005 standard, item 7.2.2
Protective glass deformation	no	no	no	no		
Protective glass frame breaking	no	no	no	no		
Sufficient side cover of the protection	yes	yes	yes	yes		

[1)]Specimens: *1, 2, 3, 4 — impact onto the "left eye, front" point, specimen conditioned at (+23±5)°C-/-*

5, 6, 7, 8 — impact onto the "right eye, front" point, specimen conditioned at (+23±5)°C-/-

9, 10 — impact onto the "left eye, side" point, specimen conditioned at (+23±5)°C-/-

11, 12 — impact onto the "right eye, side" point, specimen conditioned at (+23±5)°C-/-

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Flame resistance-/-

Examined property	Specimen number			Requirement acc. to PN-EN 166:2005	Assessment of meeting/not meeting the requirement
	10	11	12		
specimen burns	no	no	no	During the test, no element of the cover ignites or glows after removing the steel bar.	Meets the requirements of the PN-EN 166:2005 standard, item 7.1.7
specimen glows	no	no	no		

Field of view test*-/-

Item	Specimen number			Requirement acc. to PN-EN 166:2005	Assessment of meeting/not meeting the requirement
	2	3	5		
The protection assures the minimum field of view	yes	yes	yes	The face protection shall ensure the minimum field of view defined with two ellipses when these are placed on the head model and centred at 25 mm from the eyes.	Meets the requirements of the PN-EN 166:2005 standard, item 7.1.1

Liquid splash protection*-/-

Specimen number	Item		Requirement acc. to PN-EN 166:2005	Assessment of meeting/not meeting the requirement
	The protection covers the rectangular eye area	Depth of the vertical centreline of the cover [mm][1)]		
13	yes	180	Eye protection covers the rectangular eye area on the head model. The protection should have the field of view with the minimum depth of the vertical centreline of 150 mm.	Meets the requirements of the PN-EN 166:2005 standard, item 7.2.4
14	yes	180		
15	yes	180		

[1)] Depth measurements of the vertical centreline was performed taking into account the actual field of view of a cover installed in the frame supplied by the manufacturer.-/-

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Testing order number: 646/PB-COV/2020/NO-/-

Opinion/interpretation*-/-

The report covers also the range of selected parameters concerning eye and face protective equipment intended solely for the personnel providing healthcare services, including medical transport, services and other people working with the aim of combating SARS-CoV-2 virus and the COVID-19 disease it causes and with the aim of avoiding further spread of the virus and the disease it causes[1]. These parameters received positive assessment.-/-

The following information should be attached to the product intended only for medical personnel:-/-

- it is intended solely for the personnel providing healthcare services, including medical transport, services and other people working with the aim of combating SARS-CoV-2 virus and the COVID-19 disease it causes, and with the aim of avoiding further spread of the virus and the disease it causes,-/-
- it can be used only in the period of high epidemic threat and during the epidemic, however no longer than during 30 days from the revocation of the state of epidemic associated with the SARS-CoV-2 infections-/-

  and manufacturer's details (name, address).-/-

Full name of the person preparing the opinion/interpretation: *Grzegorz Owczarek* [*illegible signature*]-/-

* The opinion/interpretation included in this report is not covered by the accreditation.-/-

End of the Report-/-

[1] Resolution No 33/2020 of the Council of Ministers of 20 March 2020 on the specific solutions in terms of supply of the personal protective equipment necessary for preventing the spread of the SARS-CoV-2 virus.-/-

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I, Jacek Kasprzyk, the undersigned and duly commissioned Sworn Translator of the English Language do hereby confirm that the above translation is a complete and true version of the original document in the Polish language.
Wrocław, this 27th day of July, 2020.
Register no. 413/2020

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