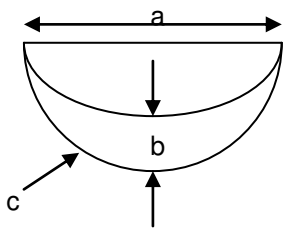
Test mark:	11921-ECS-18
Type:	Safety faceshield, visor FC48 + bracket A2, A3, A4

Measurement report 1

Description of the type

Design:



Dimensions:
a / mm: 230
b / mm: 203
c / mm: 395

Middle thickness of the visor:
1.0 ± 0.05 mm

Vertex power / dpt:
Front surface:
horizontal: +4.8 – vertical: 0.0
Back surface:
horizontal: - 5.2 – vertical: 0.0

Visor FC48 mounted on A2 visor bracket with HR36 safety helmet

Clear visor made of polycarbonate with Alu-Rim assembled on 3 different kind of visor brackets for safety helmet

Visor:	Identification mark:	BLUE EAGLE 1B CE CAN/CSA Z 94.3 ANSI Z87+ FACESHIELD VISOR 8”x15½“x1.0mm CLEAR POLYCARBONATE MODEL NO. FC48 MADE IN TAIWAN
	Material:	Polycarbonate, Al rim
Visor Bracket Material:		A2: ABS A3: Aluminium and ABS A4: Aluminium
Information brochure / instruction manual		available and complete

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Quality of material and surface, refractive powers, prism imbalance, diffusion of light, transmission

test ↓ sample →			18192 -1	-2	-3	-4	-5	-6
quality of material and surface			+	+	+	+	+	+
field of vision			+	+	+	+	+	+
side protection			+	+	+	+	+	+
face protection			+	+	+	+	+	+
spherical refractive power	R L	dpt	-0.02 -0.04	-0.02 -0.03	0.00 -0.01	-0.02 -0.02	-0.03 -0.02	-0.01 -0.01
astigmatic refractive power	R L	dpt	0.01 0.02	0.03 0.01	0.01 0.02	0.01 0.01	0.02 0.01	0.01 0.02
prism imbalence (horizontal / vertical)		cm/m	BO 0.15 / 0.00	BO 0.15 / 0.00	BO 0.15 / 0.00	BO 0.15 / 0.00	BO 0.10 / 0.00	BO 0.10 / 0.00
optical class			1	1	1	1	1	1
reduced luminance coefficient, diffusion of light	R L	$\frac{cd/m^2}{lx}$	0.02 0.02	0.01 0.01	0.01 0.01	0.02 0.01	0.02 0.03	0.01 0.03
luminous transmittance rel NA τ		%	89.6	89.5	89.5	89.4	89.5	89.4
luminous transmittance rel D65 τ		%	89.5	89.5	89.4	89.3	89.5	89.4

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Filtering action for UV-filter

EN 170

test ↓ sample →		18192					
		-1	-2	-3	-4	-5	-6
luminous transmittance rel NA τ	%	89.6	89.5	89.5	89.4	89.5	89.4
transmission 210 nm ≤ λ ≤ 313 nm	%	***> 3*10^{-4}***	***> 3*10^{-4}***	***> 3*10^{-4}***	***> 3*10^{-4}***	***> 3*10^{-4}***	***> 3*10^{-4}***
transmission 313 nm < λ ≤ 365 nm	%	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10	≤ 10
transmission 365 nm < λ ≤ 405 nm	%	≤ τ	≤ τ	≤ τ	≤ τ	≤ τ	≤ τ
transmission 500 nm ≤ λ ≤ 650 nm	%	≥ 0.2τ	≥ 0.2τ	≥ 0.2τ	≥ 0.2τ	≥ 0.2τ	≥ 0.2τ
recognition of signal lights: blue, green, yellow, red		+	+	+	+	+	+
shade number UV-filter		***no UV-filtering action***					

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Quality of material and surface, refractive powers after test to thermal ageing

test ↓ sample →		18192 -1	-2	-3
quality of material and surface		no visible surface modification after thermal ageing		
spherical power	dpt	0.00	0.00	0.00
astigmatic power	dpt	0.00	0.00	0.00
prismatic power / prism imbalance (horizontal/vertical)	cm/m	0.0 / 0.0	0.0 / 0.0	0.0 / 0.0

Quality of material and surface, diffusion of light, transmission after test to UV ageing

test ↓ sample →		18192 -4	-5	-6
quality of material and surface		no visible surface modification or coating depletion after UV ageing or after breathing on the surface		
reduced luminance coefficient, diffusion of light	$\frac{cd/m^2}{lx}$	0.07	0.03	0.03
luminous transmittance rel NA τ	%	88.2	88.8	88.5
relative change	%	1.4	0.8	1.0

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Increased robustness

sample ↓ test →	test temperature / °C	test point	results
18192-7	-5	2 * frontal	+ +
18192-8	-5	2 * frontal	+ +
18192-9	-5	2 * frontal	+ +
18192-10	-5	2 * frontal	+ +
18192-11	-5	2 * frontal	+ +
18192-12	-5	2 * frontal	+ +
18192-13	+55	2 * frontal	+ +
18192-14	+55	2 * frontal	+ +
18192-15	+55	2 * frontal	+ +
18192-16	+55	2 * frontal	+ +
18192-17	+55	2 * frontal	+ +
18192-18	+55	2 * frontal	+ +

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Protection against high-speed particles / resistance to medium energy impact at extremes of temperature

sample ↓ test →	test temperature / °C	test point	speed / m/s	results
18192-19	-5	left frontal, right side	≥ 120	+ +
18192-20	-5	left frontal, right side	≥ 120	+ +
18192-21	-5	left frontal, right side	≥ 120	+ +
18192-22	-5	right frontal, left side	≥ 120	+ +
18192-23	-5	right frontal, left side	≥ 120	+ +
18192-24	-5	right frontal, left side	≥ 120	+ +
18192-25	+55	left frontal, right side	≥ 120	+ +
18192-26	+55	left frontal, right side	≥ 120	+ +
18192-27	+55	left frontal, right side	≥ 120	+ +
18192-28	+55	right frontal, left side	≥ 120	+ +
18192-29	+55	right frontal, left side	≥ 120	+ +
18192-30	+55	right frontal, left side	≥ 120	+ +

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Resistance to ignition

test ↓ sample →	18192		
	-10	-11	-12
flammability	temperature ≥ 650 °C no ignition, no further glowing		

Resistance to corrosion

test ↓ sample →	18192		
	-7	-8	-9
corrosion	+	+	+

Protection against splashes of liquids

test ↓ sample →	18192
	-1 to -33
protection against splashes of liquids for face shield / visor	+

Protection against molten metal and hot solids

test ↓ sample →		18192		
		-31	-32	-33
molten aluminum		No adherence, +	./.	./.
molten iron		./.	No adherence, +	./.
hot solids penetration	s	./.	./.	> 7, +

– End of Measurement Report 1 –