

Test Report

No. 2131-ECS-19

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Test lab accredited by DAkkS D-PL-19590-02-00

Notified by the Central Authority of the Federal States for Safety Technologies (ZLS) ZLS-NB-0304

Customer

Kanghua Safety Equipment
Manufacturing Co., Ltd.
Dianhouzhou Village, Zhuge Town
LANXI CITY
P. R. CHINA

Manufacturer

Test report contains	Main part and 1 measurement report
Number of pages in this test report	6
Product	Safety goggles for occupational use
Arrival of samples	Apr 17, 2019
Period of testing	Apr 25 to May 03, 2019
Test specifications (Standards)	EN 166 : 2001
Remarks	Retests for recertification

The results described in this test report refer to the mentioned test samples, exclusively. A copy of the test report, complete or in extracts, is not allowed without any written permission of the ECS GmbH Aalen.

Aalen, 10 May 2019

Dipl.-Ing. (FH) Sonja Forstreuter
Head of ECS-test lab

Test objects, tests and results

Based on the tables as written in the standards EN 166, the main part assigns the test samples to the named tests. The test results are documented according to the named standards.

Signs and symbols

The requirements are described in EN 166

- + meet the requirements
- do not meet the requirements
- / not tested
- n.a. not applicable
- n.v. not available
- G borderline case
- Ab interruption of the testing sequence
- BO Base out
- BI Base in
- RT Room temperature

Whenever the dioptric power of the surface is stated, this value was calculated using the formula $F=0,523/r$, where "r" is the radius of the curved surface.

The relative measurement uncertainties of the applied optical metrological instruments correspond to the required one in EN 167.

Unless stated otherwise, the measurements were carried out in the main viewing point of the specimens and, in the case of lenses with corrective power, at the applicable reference point.

Test results

The annexes document the test results of each individual measurement. All results printed in bold and italic type document that the test sample did actually not meet the requirements which are demanded in the specified standards.

Samples and summary of the test results

Type: Safety goggles 2A01, 2B01 and 2C01						
Test report: 21311-ECS-19				Samples 19131-7 to -9 will be archived		
Number of delivered samples: 9		Number of test samples: 6				
Test sequence	Requirement	Tests according to				Samples 19131-1 to -6
		EN	Clause	EN	Clause	
1	Marking	166	9.2			+
2	Information delivered by the manufacturer / applicant	166	10			n.a.
3	Identity check	./.	./.			+
4	Quality of surface and material	166	7.1.3	167	5	+
5	Field of vision	166	7.1.1	168	18	+
6	Side protection	166	7.2.8	168	19	+
7	Spherical + astigmatic refractive powers	166	7.1.2	167	3.2	+
8	Prism imbalance	166	7.1.2	167	3.2	+
9	Luminous transmittance rel. NA / D65	166	7.1.2	167	6	+
10	Diffusion of light	166	7.1.2	167	4	+
11	Protection against high speed particles, medium energy impact (B)	166	7.3.4	168	9	+
See the measurement report 1 for the individual results of each test sample.						

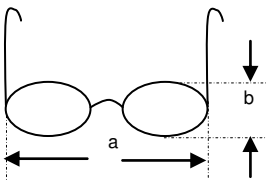
Test mark: 21311-ECS-19

Type: Safety goggles 2A01, 2B01 and 2C01

Measurement Report 1

This measurement report refers to 1001-ECS-09. Due to renewal of certificate C904.1HKH retests have been performed for recertification.


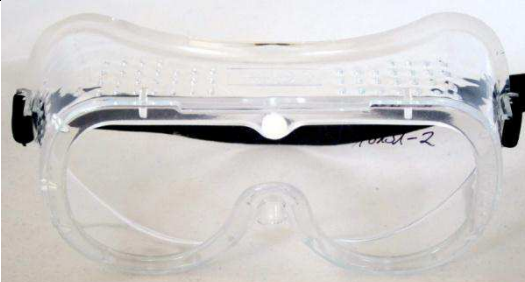

Description of the type

<p>Design:</p> 	<p>Safety goggles for occupational use, polycarbonate lens covering both eyes, three different frames made of PVC</p> <p>middle thickness of lens: 1.5 mm ± 0.05 mm</p> <p>Vertex power / dpt: Front surface: 0.0</p>					
	<table> <tr> <td>Model 2A01:</td> <td>Models 2B01 & 2C01</td> </tr> <tr> <td>a / mm: 165</td> <td>a / mm: 190</td> </tr> <tr> <td>b / mm: 78</td> <td>b / mm: 80</td> </tr> </table>	Model 2A01:	Models 2B01 & 2C01	a / mm: 165	a / mm: 190	b / mm: 78
Model 2A01:	Models 2B01 & 2C01					
a / mm: 165	a / mm: 190					
b / mm: 78	b / mm: 80					
<p>Frame:</p>	<p>Identification mark: CE 166 B HKH 1 B</p>					
	<p>Material: PVC, black elastic headband</p>					
<p>Lens:</p>	<p>Identification mark: none</p>					
	<p>Material: Polycarbonate</p>					
<p>Information from the producer:</p>	<p>see technical files acc to PPE-Regulation (EU) 2016/425</p>					

Test mark: 21311-ECS-19

Type: Safety goggles 2A01, 2B01 and 2C01

Samples assigned to numbers

Sample number	Description	Picture
19131-1, -4 and -7	Figure 1: Model 2A01 light green transparent frame, indirect ventilation, 4 black inserts	
19131-2, -5 and -8	Figure 2: Model 2B01 clear transparent frame, direct ventilation	
19131-3, -6 and -9	Figure 3: Model 2C01 clear transparent frame, indirect ventilation, 4 white inserts	

Identity check

test ↓	sample →	19131-1	19131-2	19131-3
reference samples / test mark		9001-13, -30 and -46 / 1001-ECS-09		
results		<p>The samples are identical to the reference samples in form, size, colour, material and transmittance</p> <p>Remark: size of the plastic rivets changed, head band is a bit broader (now 12mm), nose parts slightly smaller.</p>		

Test mark:	21311-ECS-19
Type:	Safety goggles 2A01, 2B01 and 2C01

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

test ↓		sample →		19131		
				-1	-2	-3
quality of material and surface				+	+	+
field of vision				+	+	+
side protection				+	+	+
spherical power		R L	dpt	-0.01 -0.01	-0.01 -0.01	-0.01 -0.01
astigmatic power		R L	dpt	0.01 0.01	0.01 0.01	0.01 0.01
prism imbalance (horizontal/vertical)			cm / m	0.00 / 0.00	0.00 / 0.00	0.00 / 0.00
optical class				1	1	1
reduced luminance coefficient, diffusion of light		R L	$\frac{\text{cd/m}^2}{\text{lx}}$	0.09 0.06	0.07 0.07	0.04 0.05
luminous transmittance rel NA τ			%	88.8	89.1	89.2
luminous transmittance rel D65 τ			%	88.8	89.0	89.1

Protection against high-speed particles / resistance to energy impact

sample ↓	test →	test temperature / °C	test point	speed / m/s	Results
19131-4		RT	left frontal / right side	≥ 120	+ +
19131-5		RT	right frontal / left side	≥ 120	+ +
19131-6		RT	left frontal / right side	≥ 120	+ +

– End of Measurement Report 1 –