

Test Report

No. 1193-PZA-13

Rev. 1

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Customer**Ningbo Geostar Electronics Co., Ltd.**
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Test report contains	Main part and 6 annexes
Number of pages	22
Product	Welder's face shield
Arrival of samples	2013-08-27 2 nd delivery: 2013-10-02
Period of testing	2013-09-04 to 2013-10-15
Reference standard	DIN EN 175 : 1997-08
Remarks	None

This test report relates to the mentioned test samples. Without the permission of the DIN CERTCO test centre Nürnberg this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any certification mark.

Nürnberg, 2014-03--30

Compiled by:



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Reviewed by:



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Test objects, tests and results

Based on the tables as written in the standard DIN EN 175, the main part assigns the test samples to the named tests.

Each individual test result is documented in the annexes according to the named standards. All results printed in bold and italic types document that the sample does not meet the requirements which are demanded in the specified standards.

Signs and symbols:

- + meet the requirements
- ***do not meet the requirements***
- / not tested or not applicable
- Ab interruption of the testing sequence

Samples and summary of all test results

Type:	Welder's face shield, type "VENUS"
Test mark:	11931-PZA-13
Number of delivered parts: 7	Number of test samples: 7



Test-sequence	Requirements	Tests				Sample 3193-1 to 3193-7
		According to		According to		
		DIN EN	Clause	DIN EN	Clause	
1	Information for users	175	10	175	10	+
2	Design and manufacture	175	4	175	4	+
3	General requirements	175	5.1	175	5.1	+
4	Area of coverage	175	5.3	168	10.2	+
5	Light reflectance	175	5.6	175	5.6	+
6	Light attenuation	175	5.7	175	8.4	+
7	Suitability of cleaning and disinfection	175	5.12	175	5.12	+
8	Mass	175	5.13	175	5.13	+
9	Harness	175	6	175	6	+
10	Resistance to damage when dropped	175	5.5	175	8.2	+
	-5°C +80°C					
11	Electrical insulation	175	5.8	175	8.3	+
12	Resistance to ignition	175	5.9	168	7	+
13	Resistance to hot penetration	175	5.10	168	7	+
14	Resistance to corrosion	175	5.11	168	8	+
15	Increased robustness	175	5.4	168	3	+
	+55°C -5°C					
16	Protection against high-speed particles (45 m/s)	175	7.1	168	9	+

Individual results of each test sample see annex 1

Marking:

None

Type:	Welder's face shield, type "CHARM"
Test mark:	11932-PZA-13
Number of delivered parts: 7	Number of test samples: 7



Test-sequence	Requirements	According to		According to		Sample 3193-8 to 3193-14
		DIN EN	Clause	DIN EN	Clause	
1	Information for users	175	10	175	10	+
2	Design and manufacture	175	4	175	4	+
3	General requirements	175	5.1	175	5.1	+
4	Area of coverage	175	5.3	168	10.2	+
5	Light reflectance	175	5.6	175	5.6	+
6	Light attenuation	175	5.7	175	8.4	+
7	Suitability of cleaning and disinfection	175	5.12	175	5.12	+
8	Mass	175	5.13	175	5.13	+
9	Harness	175	6	175	6	+
10	Resistance to damage when dropped	175	5.5	175	8.2	+
	-5°C +80°C					
11	Electrical insulation	175	5.8	175	8.3	+
12	Resistance to ignition	175	5.9	168	7	+
13	Resistance to hot penetration	175	5.10	168	7	+
14	Resistance to corrosion	175	5.11	168	8	+
15	Increased robustness	175	5.4	168	3	+
	+55°C -5°C					
16	Protection against high-speed particles (45 m/s)	175	7.1	168	9	+

Individual results of each test sample see annex 2

Marking:

None



Type:	Welder's face shield, type "LUXE"
Test mark:	11933-PZA-13
Number of delivered parts: 7	Number of test samples: 7



Test-sequence	Requirements	According to		According to		Sample 3193-15 to 3193-21
		DIN EN	Clause	DIN EN	Clause	
1	Information for users	175	10	175	10	/
2	Design and manufacture	175	4	175	4	+
3	General requirements	175	5.1	175	5.1	+
4	Area of coverage	175	5.3	168	10.2	+
5	Light reflectance	175	5.6	175	5.6	+
6	Light attenuation	175	5.7	175	8.4	+
7	Suitability of cleaning and disinfection	175	5.12	175	5.12	+
8	Mass	175	5.13	175	5.13	+
9	Harness	175	6	175	6	+
10	Resistance to damage when dropped	175	5.5	175	8.2	-
	-5°C +80°C					
11	Electrical insulation	175	5.8	175	8.3	/
12	Resistance to ignition	175	5.9	168	7	/
13	Resistance to hot penetration	175	5.10	168	7	/
14	Resistance to corrosion	175	5.11	168	8	/
15	Increased robustness	175	5.4	168	3	/
						+55°C -5°C
16	Protection against high-speed particles (45 m/s)	175	7.1	168	9	/

Individual results of each test sample see annex 3

Marking:

None

2nd delivery from 2013-10-02 :

Type:	Welder's face shield, type "LUXE"
Test mark:	11933-PZA-13
Number of delivered parts: 7	Number of test samples: 7



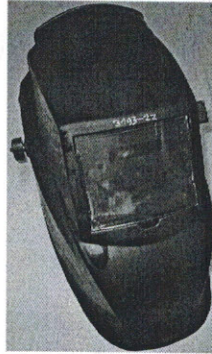
Test-sequence	Requirements	According to		According to		Sample 3193-43 to 3193-49
		DIN EN	Clause	DIN EN	Clause	
1	Information for users	175	10	175	10	+
2	Design and manufacture	175	4	175	4	+
3	General requirements	175	5.1	175	5.1	+
4	Area of coverage	175	5.3	168	10.2	+
5	Light reflectance	175	5.6	175	5.6	+
6	Light attenuation	175	5.7	175	8.4	+
7	Suitability of cleaning and disinfection	175	5.12	175	5.12	+
8	Mass	175	5.13	175	5.13	+
9	Harness	175	6	175	6	+
10	Resistance to damage when dropped	175	5.5	175	8.2	+
	+80°C					
11	Electrical insulation	175	5.8	175	8.3	+
12	Resistance to ignition	175	5.9	168	7	+
13	Resistance to hot penetration	175	5.10	168	7	+
14	Resistance to corrosion	175	5.11	168	8	+
15	Increased robustness	175	5.4	168	3	+
	-5°C					
16	Protection against high-speed particles (45 m/s)	175	7.1	168	9	+

Individual results of each test sample see annex 3

Marking:

None

Type:	Welder's face shield, type "ASTRO"
Test mark:	11934-PZA-13
Number of delivered parts: 7	Number of test samples: 7



Test-sequence	Requirements	According to		According to		Sample 3193-22 to 3193-28
		DIN EN	Clause	DIN EN	Clause	
1	Information for users	175	10	175	10	+
2	Design and manufacture	175	4	175	4	+
3	General requirements	175	5.1	175	5.1	+
4	Area of coverage	175	5.3	168	10.2	+
5	Light reflectance	175	5.6	175	5.6	+
6	Light attenuation	175	5.7	175	8.4	+
7	Suitability of cleaning and disinfection	175	5.12	175	5.12	+
8	Mass	175	5.13	175	5.13	+
9	Harness	175	6	175	6	+
10	Resistance to damage when dropped	-5°C	5.5	175	8.2	+
		+80°C				
11	Electrical insulation	175	5.8	175	8.3	+
12	Resistance to ignition	175	5.9	168	7	+
13	Resistance to hot penetration	175	5.10	168	7	+
14	Resistance to corrosion	175	5.11	168	8	+
15	Increased robustness	+55°C	5.4	168	3	+
		-5°C				
16	Protection against high-speed particles (45 m/s)	175	7.1	168	9	+

Individual results of each test sample see annex 4

Marking:

None

Type:	Welder's face shield, type "SMART"
Test mark:	11935-PZA-13
Number of delivered parts: 7	Number of test samples: 7



Test-sequence	Requirements	According to		According to		Sample 3193-29 to 3193-35	
		DIN EN	Clause	DIN EN	Clause		
1	Information for users	175	10	175	10	+	
2	Design and manufacture	175	4	175	4	+	
3	General requirements	175	5.1	175	5.1	+	
4	Area of coverage	175	5.3	168	10.2	+	
5	Light reflectance	175	5.6	175	5.6	+	
6	Light attenuation	175	5.7	175	8.4	+	
7	Suitability of cleaning and disinfection	175	5.12	175	5.12	+	
8	Mass	175	5.13	175	5.13	+	
9	Harness	175	6	175	6	+	
10	Resistance to damage when dropped	-5°C	175	5.5	175	8.2	+
		+80°C					
11	Electrical insulation	175	5.8	175	8.3	+	
12	Resistance to ignition	175	5.9	168	7	+	
13	Resistance to hot penetration	175	5.10	168	7	+	
14	Resistance to corrosion	175	5.11	168	8	+	
15	Increased robustness	+55°C	175	5.4	168	3	+
		-5°C					
16	Protection against high-speed particles (45 m/s)	175	7.1	168	9	+	

Individual results of each test sample see annex 5

Marking:

None

Type:	Welder's face shield, type "WEGA"
Test mark:	11936-PZA-13
Number of delivered parts: 7	Number of test samples: 7



Test-sequence	Requirements	According to		According to		Sample 3193-36 to 3193-42	
		DIN EN	Clause	DIN EN	Clause		
1	Information for users	175	10	175	10	+	
2	Design and manufacture	175	4	175	4	+	
3	General requirements	175	5.1	175	5.1	+	
4	Area of coverage	175	5.3	168	10.2	+	
5	Light reflectance	175	5.6	175	5.6	+	
6	Light attenuation	175	5.7	175	8.4	+	
7	Suitability of cleaning and disinfection	175	5.12	175	5.12	+	
8	Mass	175	5.13	175	5.13	+	
9	Harness	175	6	175	6	+	
10	Resistance to damage when dropped	-5°C	175	5.5	175	8.2	+
		+80°C					
11	Electrical insulation	175	5.8	175	8.3	+	
12	Resistance to ignition	175	5.9	168	7	+	
13	Resistance to hot penetration	175	5.10	168	7	+	
14	Resistance to corrosion	175	5.11	168	8	+	
15	Increased robustness	+55°C	175	5.4	168	3	+
		-5°C					
16	Protection against high-speed particles (45 m/s)	175	7.1	168	9	+	

Individual results of each test sample see annex 6

Marking:

None

ANNEX 1

Type:	Welder's face shield, type "VENUS"
Test mark:	11931-PZA-13

Description of the type

Material:	Plastics, foam, metal springs
Color:	Black
Information for users:	Available and complete
Design and manufacture:	General construction, field of vision, materials, headbands, heat insulation and replacement meet the requirements
General requirements:	Welding protector housing and ventilation meet the requirements
Area of coverage:	Meets the requirements
Light reflectance:	Meets the requirements
Light attenuation:	Meets the requirements
Suitability of cleaning and disinfection:	Meets the requirements
Mass:	439 g
Harness:	Meets the requirements

Resistance of welder's shields to damage when dropped

Sample	Temperature	Test series	Comments
3193-1	-5°C	1 st drop	+
		2 nd drop	+
		3 rd drop	+
3193-2	+80°C	1 st drop	+
		2 nd drop	+
		3 rd drop	+

Type:	Welder's face shield, type "VENUS"
Test mark:	11931-PZA-13

Electrical insulation and resistance to ignition, resistance to hot penetration and resistance to corrosion

Test ↓	Sample →	3193-1	3193-2	3193-3
Electrical insulation		+	+	+
Resistance to ignition		+	+	+
Resistance to hot penetration penetrating time in [s]		Head area: 9 Throat area: 14	Head area: 9 Throat area: 13	Head area: 10 Throat area: 13
Resistance to corrosion		+	+	+

Increased robustness

Sample	Temperature [°C]	Impact points		Comments	
3193-4	+55	1	4	+	+
3193-5	+55	2	3	+	+
3193-6	-5	1	4	+	+
3193-7	-5	2	3	+	+

impact point 1:
impact point 2:

left eye frontal
right eye frontal

impact point 3:
impact point 4:

left eye side
right eye side

Protection against high-speed particles

Ambient temperature: 23° C

bullet speed: 45 m/s

Sample	Impact points		Comments	
3193-4	1	4	+	+
3193-5	2	3	+	+
3193-6	1	4	+	+
3193-7	2	3	+	+

impact point 1:
impact point 2:

left eye frontal
right eye frontal

impact point 3:
impact point 4:

left eye side
right eye side

ANNEX 2

Type:	Welder's face shield, type "CHARM"
Test mark:	11932-PZA-13

Description of the type

Material:	Plastics, foam, metal springs
Color:	Black
Information for users:	Available and complete
Design and manufacture:	General construction, field of vision, materials, headbands, heat insulation and replacement meet the requirements
General requirements:	Welding protector housing and ventilation meet the requirements
Area of coverage:	Meets the requirements
Light reflectance:	Meets the requirements
Light attenuation:	Meets the requirements
Suitability of cleaning and disinfection:	Meets the requirements
Mass:	458 g
Harness:	Meets the requirements

Resistance of welder's shields to damage when dropped

Sample	Temperature	Test series	Comments
3193-8	-5°C	1 st drop	+
		2 nd drop	+
		3 rd drop	+
3193-9	+80°C	1 st drop	+
		2 nd drop	+
		3 rd drop	+

Type:	Welder's face shield, type "CHARM"
Test mark:	11932-PZA-13

Electrical insulation and resistance to ignition, resistance to hot penetration and resistance to corrosion

Test ↓	Sample →	3193-8	3193-9	3193-10
Electrical insulation		+	+	+
Resistance to ignition		+	+	+
Resistance to hot penetration penetrating time in [s]		Head area: 11 Throat area: 14	Head area: 12 Throat area: 11	Head area: 13 Throat area: 13
Resistance to corrosion		+	+	+

Increased robustness

Sample	Temperature [°C]	Impact points		Comments	
3193-11	+55	1	4	+	+
3193-12	+55	2	3	+	+
3193-13	-5	1	4	+	+
3193-14	-5	2	3	+	+

impact point 1:
impact point 2:

left eye frontal
right eye frontal

impact point 3:
impact point 4:

left eye side
right eye side

Protection against high-speed particles

Ambient temperature: 23° C

bullet speed: 45 m/s

Sample	Impact points		Comments	
3193-11	1	4	+	+
3193-12	2	3	+	+
3193-13	1	4	+	+
3193-14	2	3	+	+

impact point 1:
impact point 2:

left eye frontal
right eye frontal

impact point 3:
impact point 4:

left eye side
right eye side

ANNEX 3

Type:	Welder's face shield, type "LUXE"
Test mark:	11933-PZA-13

Description of the type

Material:	Plastics, foam, metal springs
Color:	Black
Design and manufacture:	General construction, field of vision, materials, headbands, heat insulation and replacement meet the requirements
General requirements:	Welding protector housing and ventilation meet the requirements
Area of coverage:	Meets the requirements
Light reflectance:	Meets the requirements
Light attenuation:	Meets the requirements
Suitability of cleaning and disinfection:	Meets the requirements
Mass:	438 g
Harness:	Meets the requirements

Resistance of welder's shields to damage when dropped

Sample	Temperature	Test series	Comments
3193-15	-5°C	1 st drop	+
		2 nd drop	+
		3 rd drop	- (<i>lower left bracket of the frame broke</i>)
3193-16	+80°C	1 st drop	+
		2 nd drop	+
		3 rd drop	+

Type:	Welder's face shield, type "LUXE"
Test mark:	11933-PZA-13

2nd delivery from 2013-10-02 :

Description of the type

Material:	Plastics, foam, metal springs
Color:	Black
Information for users:	Available and complete
Design and manufacture:	General construction, field of vision, materials, headbands, heat insulation and replacement meet the requirements
General requirements:	Welding protector housing and ventilation meet the requirements
Area of coverage:	Meets the requirements
Light reflectance:	Meets the requirements
Light attenuation:	Meets the requirements
Suitability of cleaning and disinfection:	Meets the requirements
Mass:	427 g
Harness:	Meets the requirements

Resistance of welder's shields to damage when dropped

Sample	Temperature	Test series	Comments
3193-44	-5°C	1 st drop	+
		2 nd drop	+
		3 rd drop	+
3193-43	+80°C	1 st drop	+
		2 nd drop	+
		3 rd drop	+

Type:	Welder's face shield, type "LUXE"
Test mark:	11933-PZA-13

Electrical insulation and resistance to ignition, resistance to hot penetration and resistance to corrosion

Test ↓	Sample →	3193-43	3193-44	3193-45
Electrical insulation		+	+	+
Resistance to ignition		+	+	+
Resistance to hot penetration penetrating time in [s]		Head area: 8 Throat area: 8	Head area: 11 Throat area: 9	Head area: 9 Throat area: 9
Resistance to corrosion		+	+	+

Increased robustness

Sample	Temperature [°C]	Impact points		Comments	
3193-46	+55	1	4	+	+
3193-47	+55	2	3	+	+
3193-48	-5	1	4	+	+
3193-49	-5	2	3	+	+

impact point 1:
impact point 2:

left eye frontal
right eye frontal

impact point 3:
impact point 4:

left eye side
right eye side

Protection against high-speed particles

Ambient temperature: 23° C

bullet speed: 45 m/s

Sample	Impact points		Comments	
3193-46	1	4	+	+
3193-47	2	3	+	+
3193-48	1	4	+	+
3193-49	2	3	+	+

impact point 1:
impact point 2:

left eye frontal
right eye frontal

impact point 3:
impact point 4:

left eye side
right eye side

ANNEX 4

Type:	Welder's face shield, type "ASTRO"
Test mark:	11934-PZA-13

Description of the type

Material:	Plastics, foam, metal springs
Color:	Black
Information for users:	Available and complete
Design and manufacture:	General construction, field of vision, materials, headbands, heat insulation and replacement meet the requirements
General requirements:	Welding protector housing and ventilation meet the requirements
Area of coverage:	Meets the requirements
Light reflectance:	Meets the requirements
Light attenuation:	Meets the requirements
Suitability of cleaning and disinfection:	Meets the requirements
Mass:	399 g
Harness:	Meets the requirements

Resistance of welder's shields to damage when dropped

Sample	Temperature	Test series	Comments
3193-22	-5°C	1 st drop	+
		2 nd drop	+
		3 rd drop	+
3193-23	+80°C	1 st drop	+
		2 nd drop	+
		3 rd drop	+

Type:	Welder's face shield, type "ASTRO"
Test mark:	11934-PZA-13

Electrical insulation and resistance to ignition, resistance to hot penetration and resistance to corrosion

Test ↓	Sample →	3193-22	3193-23	3193-24
Electrical insulation		+	+	+
Resistance to ignition		+	+	+
Resistance to hot penetration penetrating time in [s]		Head area: 8 Throat area: 7	Head area: 9 Throat area: 8	Head area: 10 Throat area: 9
Resistance to corrosion		+	+	+

Increased robustness

Sample	Temperature [°C]	Impact points		Comments	
3193-25	+55	1	4	+	+
3193-26	+55	2	3	+	+
3193-27	-5	1	4	+	+
3193-28	-5	2	3	+	+

impact point 1:
impact point 2:

left eye frontal
right eye frontal

impact point 3:
impact point 4:

left eye side
right eye side

Protection against high-speed particles

Ambient temperature: 23° C

bullet speed: 45 m/s

Sample	Impact points		Comments	
3193-25	1	4	+	+
3193-26	2	3	+	+
3193-27	1	4	+	+
3193-28	2	3	+	+

impact point 1:
impact point 2:

left eye frontal
right eye frontal

impact point 3:
impact point 4:

left eye side
right eye side

ANNEX 5

Type:	Welder's face shield, type "SMART"
Test mark:	11935-PZA-13

Description of the type

Material:	Plastics, foam, metal springs
Color:	Black
Information for users:	Available and complete
Design and manufacture:	General construction, field of vision, materials, headbands, heat insulation and replacement meet the requirements
General requirements:	Welding protector housing and ventilation meet the requirements
Area of coverage:	Meets the requirements
Light reflectance:	Meets the requirements
Light attenuation:	Meets the requirements
Suitability of cleaning and disinfection:	Meets the requirements
Mass:	405 g
Harness:	Meets the requirements

Resistance of welder's shields to damage when dropped

Sample	Temperature	Test series	Comments
3193-32	-5°C	1 st drop	+
		2 nd drop	+
		3 rd drop	+
3193-30	+80°C	1 st drop	+
		2 nd drop	+
		3 rd drop	+

Type:	Welder's face shield, type "SMART"
Test mark:	11935-PZA-13

Electrical insulation and resistance to ignition, resistance to hot penetration and resistance to corrosion

Test ↓	Sample →	3193-32	3193-30	3193-31
Electrical insulation		+	+	+
Resistance to ignition		+	+	+
Resistance to hot penetration penetrating time in [s]		Head area: 11 Throat area: 9	Head area: 12 Throat area: 11	Head area: 11 Throat area: 11
Resistance to corrosion		+	+	+

Increased robustness

Sample	Temperature [°C]	Impact points		Comments	
3193-29	+55	1	4	+	+
3193-33	+55	2	3	+	+
3193-34	-5	1	4	+	+
3193-35	-5	2	3	+	+

impact point 1:
impact point 2:

left eye frontal
right eye frontal

impact point 3:
impact point 4:

left eye side
right eye side

Protection against high-speed particles

Ambient temperature: 23° C

bullet speed: 45 m/s

Sample	Impact points		Comments	
3193-29	1	4	+	+
3193-33	2	3	+	+
3193-34	1	4	+	+
3193-35	2	3	+	+

impact point 1:
impact point 2:

left eye frontal
right eye frontal

impact point 3:
impact point 4:

left eye side
right eye side

ANNEX 6

Type:	Welder's face shield, type "WEGA"
Test mark:	11936-PZA-13

Description of the type

Material:	Plastics, foam, metal springs
Color:	Black
Information for users:	Available and complete
Design and manufacture:	General construction, field of vision, materials, headbands, heat insulation and replacement meet the requirements
General requirements:	Welding protector housing and ventilation meet the requirements
Area of coverage:	Meets the requirements
Light reflectance:	Meets the requirements
Light attenuation:	Meets the requirements
Suitability of cleaning and disinfection:	Meets the requirements
Mass:	450 g
Harness:	Meets the requirements

Resistance of welder's shields to damage when dropped

Sample	Temperature	Test series	Comments
3193-36	-5°C	1 st drop	+
		2 nd drop	+
		3 rd drop	+
3193-37	+80°C	1 st drop	+
		2 nd drop	+
		3 rd drop	+

Type:	Welder's face shield, type "WEGA"
Test mark:	11936-PZA-13

Electrical insulation and resistance to ignition, resistance to hot penetration and resistance to corrosion

Test ↓	Sample →	3193-36	3193-37	3193-38
Electrical insulation		+	+	+
Resistance to ignition		+	+	+
Resistance to hot penetration penetrating time in [s]		Head area: 14 Throat area: >30	Head area: 12 Throat area: 12	Head area: 12 Throat area: 11
Resistance to corrosion		+	+	+

Increased robustness

Sample	Temperature [°C]	Impact points		Comments	
3193-39	+55	1	4	+	+
3193-40	+55	2	3	+	+
3193-41	-5	1	4	+	+
3193-42	-5	2	3	+	+

impact point 1:
impact point 2:

left eye frontal
right eye frontal

impact point 3:
impact point 4:

left eye side
right eye side

Protection against high-speed particles

Ambient temperature: 23° C

bullet speed: 45 m/s

Sample	Impact points		Comments	
3193-39	1	4	+	+
3193-40	2	3	+	+
3193-41	1	4	+	+
3193-42	2	3	+	+

impact point 1:
impact point 2:

left eye frontal
right eye frontal

impact point 3:
impact point 4:

left eye side
right eye side