TEST REPORT

EN 60825-1

Safety of laser products

Part 1: Equipment classification, requirements and user's guide

Section Two - Manufacturing requirements

Report Reference No..... :	171100657SHA-001	
Compiled by (+ signature) ..... :	Jack Chen	.....
Approved by (+ signature) ..... :	Justin Yu	.....
Date of issue..... :	2017-12-19	
Testing Laboratory..... :	Intertek Testing Services Shanghai Limited	
Address ..... :	Building No.86, 1198 Qinzhou Road (North), Shanghai 200233, China	
Testing location/procedure ..... :	Same as above	
Address ..... :	Same as above	
Applicant's name ..... :	ZHE JIANG JIAJIA RIDE-ON CO., LTD	
Address ..... :	Xincang industrial Zone Pinghu City, Zhejiang Province, China	
Test specification		
Standard..... :	EN 60825-1:1994 + A11:1996 + A2:2001	
Test procedure ..... :	Testing (Laser classification only)	
Non-standard test method ..... :	N/A	
Test Report Form No...... :	EN 60825_1C / 02-02	
TRF originator ..... :	SEMKO	
Master TRF ..... :	Dated 2002-02	

Test item description ..... :	Children's Car
Trademark..... :	--
Manufacturer……	Same as applicant
Model and/or type reference..... :	JT5188, AD17729(EU), AD17730(UK), 925000(EU), 925001(UK)
Rating(s) ..... :	6Vdc

Test item particulars	
Equipment mobility ..... :	Moveable
Insulation Class of equipment ..... :	Class III
Mass of equipment (kg)..... :	Less than 7 kg
Classification of the laser product	
Laser and/or LED product class for which the equipment is assigned ..... :	--
Laser and/or LED product class of the equipment ..... :	Class 1
Laser and/or LED product class of the embedded laser/LED.....	--
Test case verdicts	
Test case does not apply to the test object .... :	N/A
Test item does meet the requirement ..... :	P(ass)
Test item does not meet the requirement ..... :	F(ail)
Testing	
Date of receipt of test item ..... :	2017-12-05
Date(s) of performance of test ..... :	2017-12-05 ~ 2017-12-19

General remarks:

This report shall not be reproduced except in full without the written approval of the testing laboratory.
The test results presented in this report relate only to the item(s) tested.
Clause numbers between brackets refer to clauses in EN 60825-1.
"(see remark #)" refers to a remark appended to the report.
"(see Annex #)" refers to an annex appended to the report.
Throughout this report a point is used as the decimal separator.

General product information

The sample Children's Car with LED light.
All models have the same LED light and circuit.
The accessible emission level of the laser output is test with whole product.

Copy of the Marking Plate and Warning Labels

None

Summary of testing

The sample complies with the requirement of "Class 1 Laser Product" according to EN 60825-1:1994 + A1:2002 + A2:2001.

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Clause	Requirement – Test	Result – Remark	Verdict
4	**ENGINEERING SPECIFICATIONS**		N/A
4.1	General remarks		N/A
4.1.1	Modification		N/A
4.2	Protective housing		N/A
4.2.1	General		N/A
4.2.2	Service		N/A
4.2.3	Removable laser system		N/A
4.3	Access panels and safety interlocks		N/A
4.3.1	Access panels of protective housing		N/A
	Product Class.....:		—
	Accessible emission during removal of access panel .....:		N/A
	Access panel/s intended to be removed during maintenance or operation		N/A
	Removal of the panel/s gives access to laser radiation levels designated by “X” in the table		N/A
	Accessible emissions after removal.....:		—
4.3.2	Deliberate override mechanism		N/A
4.4	Remote interlock connector		N/A
4.5	Key control		N/A
4.6	Laser radiation emission warning		N/A
4.6.1	Audible or visible warning		N/A
4.6.2	Operational control and laser aperture		N/A
4.6.3	Laser emission distributed through more than one output		N/A
4.7	Beam stop or attenuation		N/A
4.8	Controls		N/A
4.9	Viewing optics		N/A
	a) human access to laser radiation in excess of Class 1M prevented when the shutter is opened or attenuation varied		N/A
	b) opening of the shutter or variation of the attenuation prevented when exposure to laser radiation in excess of Class 1M is possible		N/A
4.10	Scanning safeguard		N/A
4.11	Alignment aids		N/A
4.12	Walk-in access		N/A

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Clause	Requirement – Test	Result – Remark	Verdict
	a). Means provided so that any person inside the housing can prevent activation of a Class 3B or 4 laser hazard		N/A
	b). A warning device providing adequate warning of emission to any person within the housing		N/A
4.13	Environmental conditions		N/A
	- climatic conditions		N/A
	- vibration and shock		N/A
4.14	Protection against other hazards		N/A
4.14.1	Non-optical hazards		N/A
	- electrical hazards;		N/A
	- excessive temperature;		N/A
	- spread of fire from the equipment;		N/A
	- sound and ultrasonic;		N/A
	- harmful substances;		N/A
	- explosion;		N/A
4.14.2	Collateral radiation		N/A
5	**LABELLING**		N/A
5.1	General		N/A
	LASER PRODUCT CLASS .....:		N/A
5.2	Class 1 explanatory label provided on the product		N/A
	Optional: Class 1 explanatory label provided in the user manual		N/A
	Class 1M explanatory label provided on the product		N/A
	Optional: Class 1M explanatory label provided in the user manual		N/A
5.3	Class 2 explanatory and warning label		N/A
	Class 2M explanatory and warning label		N/A
5.4	Class 3R explanatory and warning label		N/A
5.5	Class 3B explanatory and warning label		N/A
5.6	Class 4 explanatory and warning label		N/A
5.7	Aperture label .....:		N/A
5.8	Radiation output and standards information		N/A
	Maximum output of laser radiation .....:		—
	Pulse duration .....:		—

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Clause	Requirement – Test	Result – Remark	Verdict
	Emitted wavelength(s) .....:		N/A
	The name and publication date of the standard .:		N/A
5.9	Labels for access panels		N/A
	RADIATION CLASS.....:		N/A
5.9.1	Labels for panels		N/A
	Warning used.....:		—
5.9.2	Labels for safety interlocked panels		N/A
	Warning used.....:		—
5.10	Warning for invisible laser radiation .....:		N/A
5.11	Warning for visible laser radiation .....:		N/A
5.12	Warning for LED radiation .....:		N/A

6	**OTHER INFORMATIONAL REQUIREMENTS**		N/A
6.1	Information for the user		N/A
	a) adequate instructions for proper assembly, maintenance and safe use		N/A
	b) warning for Class 1M and 2M		N/A
	c) laser beam parameters		N/A
	d) reproduction of labels		N/A
	e) location of laser apertures		N/A
	f) listing of controls, adjustment of procedures and warning statement		N/A
	g) information about laser energy source if not incorporated in the manual		N/A
6.2	Purchasing and service information		N/A
	a). Safety classification of each laser product stated in descriptive material		N/A
	b). Adequate instructions for servicing available		N/A

7	**ADDITIONAL REQUIREMENTS FOR SPECIFIC LASER PRODUCTS**		N/A
7.1	Medical laser products		N/A
	Class 3B and Class 4 medical laser products comply with EN 60601-2-22		N/A
	Medical laser products provided with instructions for calibration of measurement system		N/A
7.2	Applicable other parts of the standard series IEC/EN 60825		N/A
	IEC 60825-2 (OFCSs)		N/A

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Clause	Requirement – Test	Result – Remark	Verdict
	IEC 60825-4 (laser guards)		N/A
	IEC/TR 60825-3 (laser shows)		N/A
	IEC/TR 60825-5 (manufacturer's checklist)		N/A
	IEC/TS 60825-6 (visible information transmission)		N/A
	IEC/TS 60825-7 (non-visible information transmission)		N/A
	IEC/TR 60825-8 (medical laser equipment)		N/A
	IEC/TR 60825-9 (review of MPEs for incoherent radiation)		N/A
8	**CLASSIFICATION (Normal operating condition)**		**P**
8.4	Classification rules		P
	Applicable condition/s		P
8.4e	Time base used……..:.	100s	P
	Calculations and limits:		P
8.4f	Repetitively pulsed or modulated lasers		N/A
	Calculations and limits:		N/A
	AEL for continued operation used….....:		N/A
	Total-on-time-pulse (TOTP) method used…....:		N/A
9	**MEASUREMENTS FOR CLASSIFICATION (Normal operating condition)**		**P**
9.1	Tests		P
9.2	Measurement conditions		P
	Measured laser radiation .....:	See appended table	—
9.3	Measurement geometry		P
	a) aperture diameter (mm)…..:	See appended table	P
	b) measurement distance (mm).....:	See appended table	P
	c) angle of acceptance γ . .....:	See appended table	P
	i) photochemical limits… .....:	See appended table	P
	ii) all other limits .....:	See appended table	P

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Clause	Requirement – Test	Result – Remark	Verdict

8	**CLASSIFICATION (Fault condition)**		**P**
8.4	Classification rules		P
	Applicable condition/s		P
8.4e	Time base used…….....:	100s	P
	Calculations and limits:		P
8.4f	Repetitively pulsed or modulated lasers		N/A
	Calculations and limits:		N/A
	AEL for continued operation used….....:		N/A
	Total-on-time-pulse (TOTP) method used….....:		N/A

9	**MEASUREMENTS FOR CLASSIFICATION (Fault condition)**		**P**
9.1	Tests		P
9.2	Measurement conditions		P
	Measured laser radiation ..... :	See appended table	—
9.3	Measurement geometry		P
	a) aperture diameter (mm)..... :	See appended table	P
	b) measurement distance (mm)..... :	See appended table	P
	c) angle of acceptance γ . ..... :	See appended table	P
	i) photochemical limits… ..... :	See appended table	P
	ii) all other limits ..... :	See appended table	P

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Appended table	EQUIPMENT MANUFACTURE INFORMATION (DATA SHEET) ABOUT THE CONTAINING LASER COMPONENT/S		N/A
	Manufacturer ..... :		—
	Type designation ..... :		—
	Structure ..... :		—
	Wavelength ..... :		—
	Output power (min. and max.) ..... :		—
	Radiation is		—
	Continuous..... :		—
	Pulsed ..... :		—
	Pulse time ..... :		—
	Pulse repetition frequency ..... :		—
	Others ..... :		—

	LEDs		P
	Manufacturer.....:	Shenzhen xin 'an sanming optoelectronics co., LTD	—
	Type designation .....:	F5	—
	Wavelength .....:	See appended table	—
	Others .....:	See appended table	—

	PIC UP UNIT		N/A
	Manufacturer .....:		—
	Type designation .....:		—
	Others .....:		—

	MEASUREMENT EQUIPMENT		P
	Type of equipment.....:	Laser power meter Spectrometer	—
	Manufacturer .....:	Ophir StellarNet	—
	Type designation .....:	Laserstar + 3A BLUE Wave-UVN	—
	Others .....:	Lenses: Newport, BK 7	—

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Details of measurement procedure and measurement results:

Measured wavelength: 400-700 nm (peak 450 nm)

Calculated angular subtence α: 5.0 mrad

Aperture diameter: 7 mm

Measurement distance: Thermal: Condition 2: 23.4mm, Condition 3: 100mm

Photochemical: Condition 2: 16.8mm, Condition 3: 100mm

Normal condition:

Measured maximum power: Thermal: Condition 2: 0.015mW, Condition 3: 0.005mW

Photochemical: Condition 2: 0.025mW, Condition 3: 0.005mW

AEL(Class 1):

Power: Photochemical: $3.9 \times 10^{-5} \times C_3$ W = 3.9×10^{-5} W = 0.039 mW

Thermal: $7 \times 10^{-4} \times C_6 \times T_2^{-0.25}$ W = 12.72×10^{-4} W = 1.272 mW

Use Formula:

$C3=1.0$, $C_6=3.3$, $T_2=10.9$

Summary:

The measured emission not exceeded accessible emission levels of Class 1 for condition 2, 3, So the product is within Class 1.

Remarks

Photo: