


TEST REPORT EN 60825-1 Safety of laser products – Part 1: Equipment classification and requirements	
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Testing location	Same as above
Applicant's name	
Address	
Test specification:	
Standard	EN 60825-1:2014
Test procedure	CE
Non-standard test method	N/A
Test Report Form No.	EN60825_1E
Test Report Form(s) Originator	UNI
Test item description	Wireless Presenter
Trade Mark	XINDAO
Model and/or type reference	P314.134
Manufacturer	
Rating(s)	5V === 0.5A



Equipment mobility : Wireless Presenter	
Operation condition : Continue	
Class of equipment : Class II	
Mass of equipment (Kg) : 0.03Kg	
Protection against ingress of water ... : IP20	
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)	
General remarks:	
<p>"(see remark #)" refers to a remark appended to the report.</p> <p>"(see appended table)" refers to a table appended to the report.</p> <p>Throughout this report a comma is used as the decimal separator.</p> <p>The test results presented in this report relate only to the object tested.</p> <p>This report shall not be reproduced except in full without the written approval of the testing laboratory.</p>	<p>Attached with:</p> <p>A. Marking label</p> <p>B. Photo documentation</p> <p>Remark:</p>

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Clause	Requirement - Test	Result - Remark	Verdict

SECTION TWO --- MANUFACTURING REQUIREMENTS

4	Engineering specifications		P
4.1	General remarks		P
4.1.1	If the modification of a previously classified laser product affects any aspects of the product's performance or intended functions within the scope of this standard, the person or organization performing any such modification is responsible for ensuring the reclassification and relabeling of the laser product.		N
4.2	Protective housing		P
4.2.1	Each laser product shall have a protective housing.		P
4.2.2	Any parts of the housing or enclosure of a laser product that can be removed or displaced for service and which would allow access to laser radiation in excess of the AEL assigned and are not interlocked shall be secured in such a way that removal or displacement of the parts requires the use of tools		P
4.2.3	Removable laser system		N
4.3	Access panels and safety interlocks		N
4.3.1	A safety interlock shall be provided for access panels of protective housing when both of the following conditions are met: a) the access panel is intended to be removed or displaced during maintains or operation, and b) the removal of the panel gives access to laser radiation levels designated by "X" in the table		N
4.3.2	If a deliberate override mechanism is provided, the manufacturer shall also provide adequate instructions about safety methods of working. It shall not be possible to leave the override in operation when the access panel is returned to its normal position. The interlock shall be clearly associated with a label conforming to 5.9.2		N
4.4	Each class 3B and class 4 laser system shall have a remote interlock connector. When the terminals of the connector are open-circuited, the accessible radiation shall not exceed class1 M or class 2M.		N
4.5	Each class 3B and class 4 laser systems shall incorporate a key-operated master control. The key shall be removable and the laser radiation shall not be accessible when the key is removed.		N
4.6	Laser radiation emission warning		P

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Clause	Requirement - Test	Result - Remark	Verdict
4.6.1	Each class 3R and each class 3B and class 4 laser system shall give an audible or visible warning when it is switched on or if capacitor banks of a pulsed laser are being charged or have not positively discharged.		N
4.6.2	Each operational control and laser aperture that can be separated by 2m or more from a radiation warning device shall itself be provided with a radiation warning device.		N
4.6.3	Where the laser emission may be distributed through more than one output aperture, then a visible warning device shall clearly indicate the output aperture or apertures.		N
4.7	Each class 3B and class 4 laser system shall incorporate one or more permanently attached means of attenuation		N
4.8	Each laser product shall have control located so that adjustment and operation do not require exposure to laser radiation of class 3R,3B or class 4.		N
4.9	Any viewing optics, viewport or display screen incorporated in a laser product shall provide sufficient attenuation to prevent human access to laser radiation in excess of the AEL for Class 1M		N
4.10	Laser products intended to emit scanned radiation, shall not ,as a result of scan failure or of variation in either scan velocity or amplitude, permit human access to laser radiation in excess of the AEL for the assigned class.		N
4.11	Where routine maintenance requires the alignment of beam path components, then a safe means of achieving this shall be provided.		N
4.12	"Walk-in " access		N
4.13	The laser product shall meet the safety requirements defined in these standards under all expected operating conditions appropriate to the intended use of the product.		P
4.14	Protection against other hazards		N
4.14.1	The requirements of the relevant product safety standard shall be fulfilled MR16 LIGHT during operation and in the event of a single fault		N
4.14.2	The protective housing of laser products will normally protect against the hazards of collateral radiation		N
5	Labeling		P

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Clause	Requirement - Test	Result - Remark	Verdict
5.1	Each laser product shall carry labels. The labels shall be permanently fixed, legible, and clearly visible during operation, maintenance or service. They shall be so positioned that they can be read without the necessity for human exposure to laser radiation in excess of the AEL for Class 1		P
5.2	Each class 1 laser product shall have affixed an explanatory label (figure 15) bearing the words: CLASS 1 LASER PRODUCT Each class 1M laser product shall have affixed an explanatory label (figure 15) bearing the words: LASER RADIATION DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS CLASS 1M LASER PRODUCT		N
5.3	Each class 2 laser product shall have affixed a warning label (figure 14) and an explanatory label (figure 15) bearing the words: LASER RADIATION DO NOT STARE INTO BEAM CLASS 2 LASER PRODUCT Each class 2M laser product shall have affixed a warning label (figure 14) and an explanatory label (figure 15) bearing the words: LASER RADIATION DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS CLASS 2M LASER PRODUCT	CLASS 2 LASER PRODUCT	P
5.4	Each class 3R laser product in the wavelength range from 400nm to 1400 nm shall have affixed a warning label (figure 14) and an explanatory label (figure 15) bearing the words: LASER RADIATION AVOID DIRECT EYE EXPOSURE CLASS 3R LASER PRODUCT For other wavelengths, Each class 3R laser product shall have affixed a warning label (figure 14) and an explanatory label (figure 15) bearing the words: LASER RADIATION AVOID EXPOSURE TO BEAM CLASS 3R LASER PRODUCT		N

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5.5	Each class 3B laser product shall have affixed a warning label (figure 14) and an explanatory label (figure 15) bearing the words: LASER RADIATION AVOID EXPOSURE TO BEAM CLASS 3B LASER PRODUCT		N
5.6	Each class 4 laser product shall have affixed a warning label (figure 14) and an explanatory label (figure 15) bearing the words: LASER RADIATION AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION CLASS 4 LASER PRODUCT		N
5.7	Each class 3R, class 3B and class 4 laser products shall have affixed a label close to each aperture through which radiation in excess of the AEL for class 1 or class 2 is emitted. The label shall bear the words: LASER APERTURE or AVOID EXPOSURE -----LASER RADIATION IS EMITTED FROM THIS APERTURE		N
5.8	Radiation output and standards information		P
5.9	Labels for access panels		N
5.9.1	Labels for panels		N
5.9.2	Labels for safety interlocked panels		N
5.10	In many cases, the wording prescribed for labels in clause 5 includes the phrase "laser radiation" or "invisible laser radiation" or "Visible and invisible laser radiation"		N
5.11	The warning "laser radiation" for labels in clause 5 may be modified to be read "laser light" if the output of the laser is in the (visible) wavelength range from 400 nm to 700 nm.		P
5.12	For LED MR16 LIGHT radiation the word laser on the labels in clause 5 shall be replaced by "LED MR16 LIGHT"		N
6	Other informational requirements		P
6.1	Information for the user		P
6.1	Manufacturers of laser products shall provide as an integral part of any user instruction or operation manual which is regularly supplied with the laser product:		P

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Clause	Requirement - Test	Result - Remark	Verdict
	a) Adequate instruction for proper assembly, maintenance, and safe use, including clear warnings concerning precautions to avoid possible exposure to hazardous laser radiation		P
	b) For class 1M and 2M laser products an additional warning is required.		N
	c) A statement in appropriate units of beam divergence for collimated beams, pulse duration and maximum output, with the magnitudes of the cumulative measurement uncertainty and any expected increase in the measured quantities at any time after manufacture . Additionally, for embedded laser products and other incorporated laser products, similar information shall be provided to describe the		N
	d) Legible reproductions of all required labels and hazard warning to be affixed to the laser product or provided with the product. The corresponding position of each label affixed to the product shall be indicated.		P
	e) A clear indication in the manual of all locations of laser apertures.		N
	f) A listing of controls, adjustments and procedures for operation and maintenance, including the warning.		P
	g) In the case of laser products that do not incorporate the laser energy source necessary for laser emission, a statement of the compatibility		N
	requirements for a laser energy source to ensure safety.		
6.2	Purchasing and servicing information		P
	a) Specification sheets and descriptive brochures, the classification of each laser product and any warnings required shall be state.		P
	b) To servicing dealers and distributors, and to others upon request, adequate instructions for service adjustments and service procedures for each laser product model. The instructions shall include protective procedures for service personnel, and legible reproductions of required labels and hazard warning		P
7	Additional requirements for specific laser products		N

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Clause	Requirement - Test	Result - Remark	Verdict
7.1	Medical laser products Each medical laser product shall comply with all of the applicable requirements for laser products of its class		N
7.2	Other parts of the standards series IEC 60825		N
8	Classifications		P
8.2	Description of laser classes	CLASS 2 LASER PRODUCT	P
8.3	It is the responsibility of the manufacture or his agent to provide correct classification of a laser product.		P
8.4	Classification rules		P
	a) Radiation of a single wavelength a single wavelength laser product, with a spectral range of the emission line narrow enough so that AELs do not change, is assigned to a class when the accessible laser radiation, measured under the conditions appropriate to that class, exceeds the AEL of all lower classes but does not exceed that of the class assigned.		P
	b) Radiation of multiple wavelengths		N
	1) A laser product emitting two or more wavelengths in spectral regions shown as additive in table 5 is assigned to a class when the sum of the ratios of the accessible laser radiation, measured under the conditions appropriate to that class, to the AELs of those wavelengths is greater than unity for all lower classes but does not exceed unity for the class assigned.		N
	2) A laser product emitting two or more wavelengths not shown as additive in table 5 is		N
	assigned to a class when the accessible laser radiation, measured under the conditions appropriate to that class, exceeds the AELs of all lower classes for at least one wavelength but does not exceed the AEL for the class assigned for any wavelength.		
	c) Radiation from extended sources for an extended source, the power or energy measured be below the permitted power or energy for the AEL specified for the class as a function of the angular subtends of the source		P

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	d) Non-circular and multiple sources for laser radiation where the apparent source consists of multiple points or is a linear source with an angular subtends greater than α_{\min} and within the wavelength range from 400 nm to 1400 nm, measurements or evaluations shall be made for every single point, or assembly of points, necessary to assure that the source does not exceed the AEL for each possible angle α subtended by each partial area,		N
	e) Time bases		P
	i) 0.25 s for class 2, class 2M and class 3R laser radiation in the wavelength range from 400 nm to 700 nm		P
	ii) 100 s for laser radiation of all wavelength greater than 400 nm except for the cases listed in i) and iii)		N
	iii) 30000 s for laser radiation of all wavelengths less than or equal to 400 nm and for laser radiation of wavelengths greater than 400 nm where intentional long-term viewing is inherent in the design or function of the laser product.		N
	f) Repetitively pulsed or modulated lasers		N

9	Measurements for classification		P
9.1	Tests Tests shall take into account all errors and statistical uncertainties in the measurement process and increases in emission and degradation in radiation safety with age. Tests during operation shall be used to determine the classification of the product. The above tests shall be made under each and every reasonably foreseeable single-fault condition.		P
9.2	Measurement of laser levels may be necessary to classify a laser product in accordance with 9.1. Measurements are unnecessary when the physical characteristics and limitations of the	See Page 12	P

	laser source place the laser product or laser installation clearly in a particular class.		
9.3	Measurement geometry		P
	a) Aperture diameters		P
	b) Measurements distance		P
	c) Angle of acceptance		P

SECTION THREE --- USER'S GUIDE

10	Safety precautions		P
10.2	Use of remote interlock connector		N
10.3	Key control		N
10.4	Beam stop or attenuator		N

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Clause	Requirement - Test	Result - Remark	Verdict
10.5	Warning signs		N
10.6	Beam paths		N
10.7	Specular reflections		N
10.8	Eye protection		N
10.8.1	Identification of eyewear		N
10.8.2	Required optical density		N
10.8.3	Protective eyewear		N
10.9	Protective clothing		N
10.10	Training		N
10.11	Medical supervision		N
11	Hazards incidental to laser operation		P
11.1	Atmospheric contamination		N
11.2	Collateral radiation hazards		N
11.2.1	Ultra-violet collateral radiation		N
11.2.2	Visible and infra-red collateral radiation		N
11.3	Electrical hazards		N
11.4	Cryogenic coolants		N
11.5	Materials processing		N
11.6	Other hazards		N
12	Procedures for hazard control		P
12.1	General		N
12.2	Hazard evaluation for lasers used outdoors		P
12.3	Personal protection		P
12.4	Laser demonstrations, displays and exhibitions		P
12.5	Lab and workshop laser installations		N
12.5.1	Class 1M, class 2, class 2M and class 3R laser products		N
12.5.2	Class 3B laser products		N
12.5.3	Class 4 laser products		N
12.6	Outdoor and construction laser installations		N
12.6.1	Class 2 laser products		N
12.6.2	Class 1M, class 2M and class 3R laser products used for surveying, alignment and leveling		N
12.6.3	Class 3B and Class 4 laser products		N
12.6.4	lasers used for surveying, alignment and leveling		N
13	Maximum permissible exposures		P
13.1	General remarks		P
13.2	Limiting apertures		N
13.3	Repetitively pulsed or modulated lasers		N
13.4	Measurements conditions		N
13.4.1	Limiting apertures		N
13.4.2	Angle of acceptance		P
13.5	Extended source lasers		N

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Clause	Requirement - Test	Result - Remark	Verdict

Comparison of accessible emission level of laser radiation emitted with the accessible emission limit of certain class. Accessible emission levels are measurement values or calculated from the measurement values when necessary.

9.2 Measurement of laser radiation	Emission Duration	Class
	0.10s	II
	10s	II
	10 ⁴ s	II
	>10 ⁴ s	II
	10 ³ s	II

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Clause	Requirement - Test	Result - Remark	Verdict

ANNEX A:

Marking label

Wireless Presenter
Model: P314.134
Rating: 5V --- 0.5A



Made in china

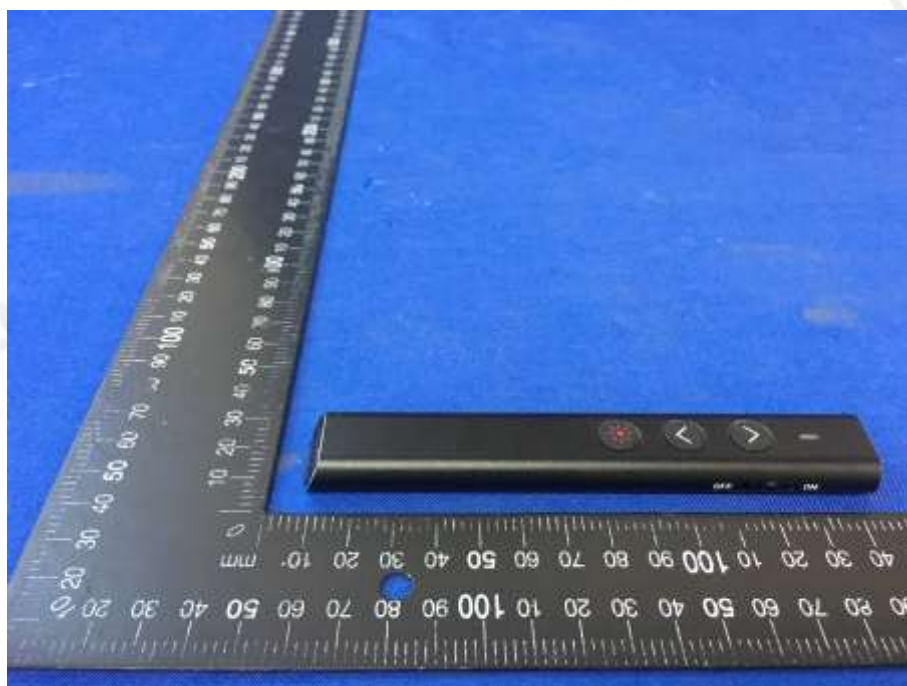
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Clause	Requirement - Test	Result - Remark	Verdict

ANNEX B:

Photo documentation



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Clause	Requirement - Test	Result - Remark	Verdict



End of report