



CE TEST REPORT

Prepared For:	Mid Ocean Brands B.V. 7/F, Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong.
Manufacturer:	Mid Ocean Brands B.V. 7/F, Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong.
Product Name:	Wireless speaker
Main Test Model :	MO9608
Additional Models:	/
Prepared By :	Dongguan True Safety Testing Co., Ltd. Room 201, No.20, East of Houjie Avenue, Houjie, Dongguan, Guangdong, China
Test Date:	Oct. 13, 2023 To Oct. 17, 2023
Date of Report :	Oct. 17, 2023
Report No.:	TST20231080179-1SR



TEST REPORT EN 62471 Photobiological Safety Test	
Testing Laboratory Name	Dongguan True Safety Testing Co., Ltd.
Address	Room 201, No.20, East of Houjie Avenue, Houjie, Dongguan, Guangdong, China
Testing location	Dongguan True Safety Testing Co., Ltd.
Applicant's Name	Mid Ocean Brands B.V.
Address	7/F, Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong.
Manufacturer	Mid Ocean Brands B.V.
Address	7/F, Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong.
Test specification	N/A
Standard.....	EN 62471:2008
Test conclusion.....	Pass
Test item description	Wireless speaker
Model and/or type reference	MO9608
Rating(s).....	DC 5V
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

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.

"(see remark #)" refers to a remark appended to the report.

"(see Annex #)" refers to an annex appended to the report.

Clause numbers between brackets refer to clauses in EN62471

Throughout this report a comma is used as the decimal separator.

General product information:

Copy of marking plate and summary of test results:

Wireless speaker

Model:MO9608

Rating:DC 5V



Mid Ocean Brands B.V.



Name and address of the testing laboratory : Dongguan True Safety Testing Co., Ltd.

Room 201, No.20, East of Houjie Avenue, Houjie,
Dongguan, Guangdong, China

Test by : Grace Oct. 17, 2023
Signature Date

Technician
Title

Review by : Apple Li Oct. 17, 2023
Signature Date

Project Engineer
Title

Approved by : Andy Oct. 17, 2023
Signature Date



Andy Zheng/ Manager
Name and Title



EN 62471			
Cl.	Requirement – Test	Result	Verdict
1	SCOPE		P
	More sections applicable.....:	Yes [<input checked="" type="checkbox"/>] No []	—
4	EXPOSURE LIMITS		P
4.1	General		P
4.2	Specific factors involved in the determination and application of retinal exposure limits		P
4.2.1	Pupil diameter		N/A
4.2.2	Angular subtense of source and measurement field-of-view		P
4.3	Hazard exposure limits		P
4.3.1	Actinic UV hazard exposure limit for the skin and eye		P
4.3.2	Near-UV hazard exposure limit for the eye		P
4.3.3	Retinal blue light hazard exposure limit		N/A
4.3.4	Retinal blue light hazard exposure limit - small source		P
4.3.5	Retinal thermal hazard exposure limit		N/A
4.3.6	Retinal thermal hazard exposure limit – weak visual stimulus		N/A
4.3.7	Infrared radiation hazard exposure limits for the eye		N/A
4.3.8	Thermal hazard exposure limit for the skin		N/A
5	MEASUREMENT OF LAMPS AND LAMP SYSTEMS		P
5.1	Measurement conditions		--
5.1.1	Lamp ageing (seasoning).....:		P
5.1.2	Test environment.....:		P
5.1.3	Extraneous radiation.....:		N/A
5.1.4	Lamp operation.....:		P
5.1.5	Lamp system operation.....:		N/A
5.2	Measurement procedure		--
5.2.1	Irradiance measurements.....:		N/A
5.2.2	Radiance measurements.....:		N/A
5.2.2.1	Standard method.....:		N/A
5.2.2.2	Alternative method.....:		P
5.2.3	Measurement of source size.....:		P
5.2.4	Pulse width measurement for pulsed sources.....:		N/A
5.3	Analysis methods		P
5.3.1	Weighting curve interpolations.....:		P
5.3.2	Calculations.....:		P



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Cl.	Requirement – Test	Result	Verdict
5.3.3	Measurement uncertainty..... :		N/A
6	LAMP CLASSIFICATION		-- N/A
	This standard was developed by CIE TC 6-47 with representation of IEC SC34A. This joint effort was deemed important so that issues concerning risk group classification and distance at which the photobiological hazard values due to lamp radiation are reported could be agreed upon. Since lamps may be hazardous from several aspects, a classification scheme is helpful. For the purposes of this standard it was decided that the values shall be reported as follows:		
	for lamps intended for general lighting service (GLS), see definition 3.11, the hazard values shall be reported as either irradiance or radiance values at a distance which produces an illuminance of 500 lux, but not at a distance less than 200 mm;		N/A
	for all other light sources, including pulsed lamp sources, the hazard values shall be reported at a distance of 200 mm.		N/A
6.1	Continuous wave lamps		P
6.1.1	Exempt group	See table 6.1	P
	The philosophical basis for the exempt group classification is that the lamp does not pose any photobiological hazard for the end points in this standard. This requirement is met by any lamp that does not pose		P
	an actinic ultraviolet hazard (E_s) within 8-hours exposure (30000 s), nor		P
	a near-UV hazard (E_{UVA}) within 1000 s, (about 16 min) nor		P
	a retinal blue-light hazard (L_B) within 10000 s (about 2,8 h), nor		P
	a retinal thermal hazard (L_R) within 10 s, nor		P
	an infrared radiation hazard for the eye (E_{IR}) within 1000 s.		P
6.1.2	Risk Group 1 (Low-Risk)		N/A
	The philosophical basis for this classification is that the lamp does not pose a hazard due to normal behavioral limitations on exposure. This requirement is met by any lamp that exceeds the limits for the Exempt Group but that does not pose		N/A
	an actinic ultraviolet hazard (E_s) within 10000 s, nor		N/A
	a near ultraviolet hazard (E_{UVA}) within 300 s, nor		N/A
	a retinal blue-light hazard (L_B) within 100 s, nor		N/A
	a retinal thermal hazard (L_R) within 10 s, nor		N/A
	an infrared radiation hazard for the eye (E_{IR}) within 100 s.		N/A
6.1.3	Risk Group 2 (Moderate-Risk)		N/A



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Cl.	Requirement – Test	Result	Verdict
	The philosophical basis for the Risk Group 2 (Moderate-Risk) classification is that the lamp does not pose a hazard due to the aversion response to very bright light sources or due to thermal discomfort. This requirement is met by any lamp that exceeds the limits for Risk Group 1 (Low-Risk), but that does not pose		N/A
	an actinic ultraviolet hazard (E_s) within 1000 s exposure, nor		N/A
	a near ultraviolet hazard (E_{UVA}) within 100 s, nor		N/A
	a retinal blue-light hazard (L_B) within 0,25 s (aversion response), nor		N/A
	a retinal thermal hazard (L_R) within 0,25 s (aversion response), nor		N/A
	an infrared radiation hazard for the eye (E_{IR}) within 10 s.		N/A
6.1.4	Risk Group 3 (High-Risk)		N/A
	The philosophical basis for this classification is that the lamp may pose a hazard even for momentary or brief exposure. Lamps which exceed the limits for Risk Group 2 (Moderate-Risk) are in Risk Group 3 (High-Risk).		N/A
6.2	Pulsed lamps		N/A
	Pulsed lamp criteria shall apply to a single pulse and to any group of pulses within 0,25 second.		N/A
ANNEX A	SUMMARY OF BIOLOGICAL EFFECTS		--
	Bioeffect datasheet #1: Infrared cataract		N/A
A.1	Bioeffect: INFRARED CATARACT also known as "industrial heat cataract", "furnaceman's cataract", or "glassblower's cataract".		N/A
A.1.1	Organ/Site: Eye/Crystalline Lens.		N/A
A.1.2	Spectral range: 700 nm to 1400 nm and possibly to 3000 nm.		N/A
A.1.3	Peak of action spectrum: Not known; probably between 900-1000 nm.		N/A
A.1.4	State of knowledge: Limited threshold data available for acute cataract for rabbit at 1064 nm (Wolbarsht, 1992) and IR-A region (Pitts and Cullen, 1981); no data for man. Degree of additivity and action spectrum unknown. Good epidemiological evidence (Lydahl, 1984).		N/A
A.1.5	Time course: Noticeable clouding of the lens generally following years of chronic high-level exposure, the elapsed time depending upon how much difference between exposure and threshold, heavy exposures producing reaction in shortest time.		N/A



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A.1.6	Mechanism: Generally presumed to be thermal, although recent evidence suggests possible photochemical reaction - details not understood. The lens may be heated either from direct irradiation (Vogt, 1919) or by conductive heating from the heated iris (Goldmann, 1983).		N/A
A.1.7	Symptoms: Clouding of vision.		N/A
A.1.8	Needed information: Action spectrum, if existent, for acute and for effects of concomitant ultraviolet radiation exposure; additivity of multiple exposures, and the possibility of delayed effects from recurrent exposures.		N/A
A.1.9	Experience with lamps: Accidental injury is not known, even from exposure to heat lamps. Limited population exposed.		N/A
A.1.10	Key references		N/A

A.2	Bioeffect		P
A.2.1	Organ/Site		P
A.2.2	Spectral range		P
A.2.3	Peak of action spectrum		P
A.2.4	State of knowledge		P
A.2.5	Time course		P
A.2.6	Mechanism		P
A.2.7	Symptoms		P
A.2.8	Needed information		P
A.2.9	Experience with lamps		P
A.2.10	Key references		P
A.3	Bioeffect		N/A
A.3.1	Organ/Site		N/A
A.3.2	Spectral range		N/A
A.3.3	Peak of action spectrum		N/A
A.3.4	State of knowledge		N/A
A.3.5	Time course		N/A
A.3.6	Mechanism		N/A
A.3.7	Symptoms		N/A
A.3.8	Needed information		N/A
A.3.9	Experience with lamps		N/A
A.3.10	Key references		N/A
A.4	Bioeffect		N/A



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Cl.	Requirement – Test	Result	Verdict
A.4.1	Organ/Site		N/A
A.4.2	Spectral range		N/A
A.4.3	Peak of action spectrum		N/A
A.4.4	State of knowledge		N/A
A.4.5	Time course		N/A
A.4.6	Mechanism		N/A
A.4.7	Symptoms		N/A
A.3.8	Needed information		N/A
A.4.9	Experience with lamps		N/A
A.4.10	Key references		N/A
A.5	Bioeffect		N/A
A.5.1	Organ/Site		N/A
A.5.2	Spectral range		N/A
A.5.3	Peak of action spectrum		N/A
A.5.4	State of knowledge		N/A
A.5.5	Time course		N/A
A.5.6	Mechanism		N/A
A.5.7	Symptoms		N/A
A.5.8	Needed information		N/A
A.5.9	Experience with lamps		N/A
A.5.10	Key references		N/A
ANNEX B	MEASUREMENT METHOD		N/A
B.1	Instrumentation		N/A
B.1.1	Double monochromator: Recommended instrument		N/A
B.1.2	Broadband detectors		N/A
B.2	Instrument limitations		N/A
B.2.1	Noise equivalent irradiance		N/A
B.2.2	Instrument spectral response		N/A
B.2.3	Wavelength accuracy		N/A
B.2.4	Stray radiant power		N/A
B.2.5	Input optics for spectral irradiance measurements: Recommendation		N/A
B.2.6	Linearity		N/A
B.3	Calibration sources		N/A
ANNEX C	UNCERTAINTY ANALYSIS		N/A



ANNEX D	GENERAL REFERENCES		N/A
ANNEX ZA	Normative references to international publications with their corresponding European publications		N/A
ANNEX ZB	EXPOSURE LIMITS (EL'S)	See ANNEX ZB above	P

Table 6.1		Emission limits for risk groups of continuous wave lamps					
Risk	Action Spectrum	Symbol	Units	Emission Measurement			
				Exempt		Low risk	
				Limit	Result	Limit	Result
Actinic UV	Suv(λ)	E _S	W·m ⁻²	0,001	0.68×10 ⁻³	0,003	N/A
Near UV	--	E _{UVA}	W·m ⁻²	10	5.9×10 ⁻³	33	N/A
Blue light	B(λ)	L _B	W·m ⁻² ·sr	100	52.6	10000	N/A
Blue light, small source	B(λ)	E _B	W·m ⁻²	1,0	N/A	1,0	N/A
Retinal thermal	R(λ)	L _R	W·m ⁻² ·sr	1×10 ⁶ (28000/ α)	726/0.1	1×10 ⁶ (28000/ α)	N/A
Retinal thermal, weak visual stimulus	R(λ)	L _{IR}	W·m ⁻² ·sr	214×10 ⁻³ (6000/ α)	N/A	214×10 ⁻³ (6000/ α)	N/A
IR radiation, eye	--	E _{IR}	W·m ⁻²	100	6.2	570	N/A

Small source defined as one with $\alpha < 0,011$ radian. Averaging field of view at 10000 s is 0,1 radian. Involves evaluation of non-GLS source

Photo 1 General Appearance of the EUT



Photo 2 General Appearance of the EUT



Photo 3 General Appearance of the EUT

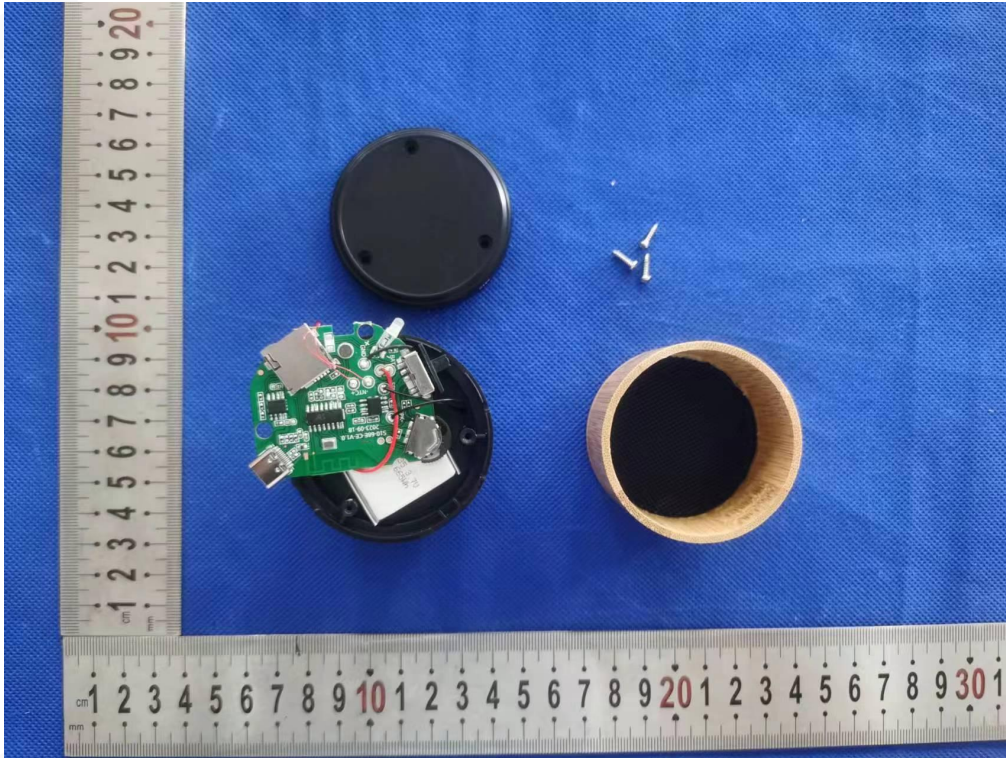


Photo 4 General Appearance of the EUT

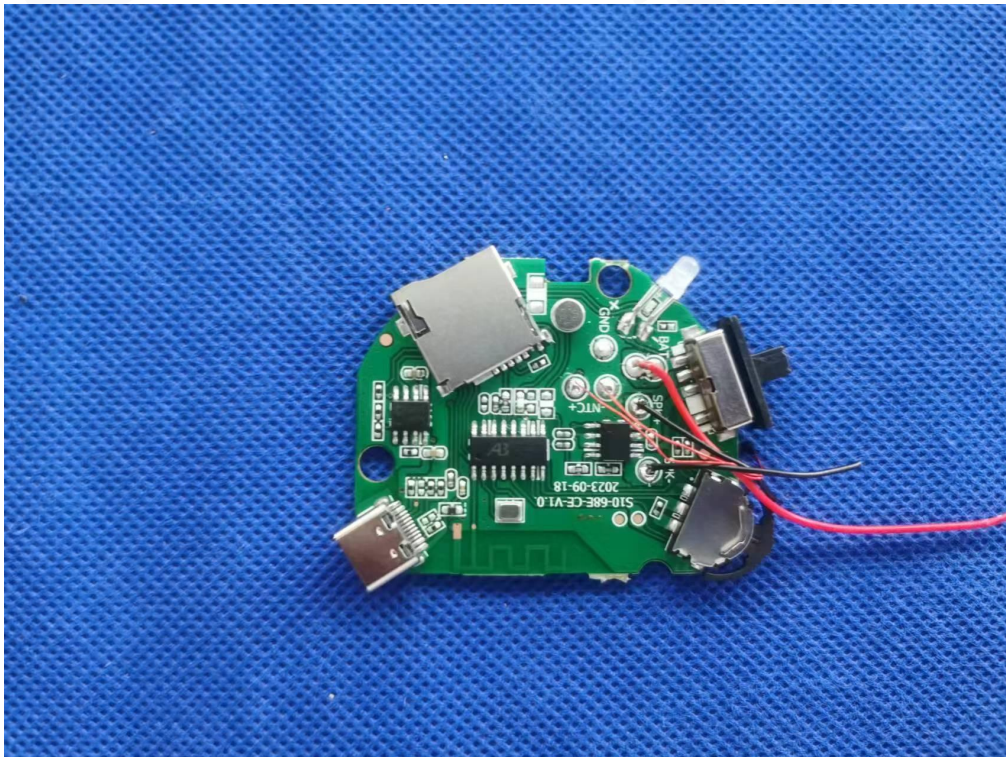


Photo 5 General Appearance of the EUT



***** The End of Report *****