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# **Test Report**

Report No.: AGC03507190404SS01

PRODUCT DESIGNATION	: Laser pen
BRAND NAME	: N/A
MODEL NAME	: M08097, M08193
CLIENT	: MID OCEAN BRANDS B.
DATE OF ISSUE	: Apr. 16, 2019
STANDARD(S)	: EN 60825-1:2014
DEDODT VEDSION	V10

## Attestation of Global Compliance (Shenzhen) Co., Ltd.

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	TEST REPORT	The ford contract of the ford contract of the
	EN 60825-1	
Part 1:Equ	Safety of laser products – ipment classification and re	quirements
Report reference No	AGC03507190404SS01	· The according of the state of
Tested by (+ signature)	: Winston Wang	Winston Wang
Review by (+ signature)	Byron Wang	Bryron Wang
Approved by (+ signature)		mette He
Date of issue	Apr. 16, 2019	A B A A B B
Contents	Total 13 pages	E Francional Contra
Testing laboratory	And Constant 6 5 Find Constant - C	
Name Address	Attestation of Global Compl 1-2/F, Building 19, Junfeng Heping Community, Fuhai S Guangdong, China	ance (Shenzhen) Co., Ltd. Industrial Park, Chongqing Road, Street, Bao 'an District, Shenzhen,
Testing location	: Same as above	
Applicant		
Name	MID OCEAN BRANDS B.V	
Address	7/F, Kings Tower, 111 King Kowloon, Hong Kong.	Lam Street, Cheung Sha Wan,
Manufacturer		
Name	MID OCEAN BRANDS B.V	
Address		Lam Street, Cheung Sha Wan,
Test specification		
Standard	: EN 60825-1:2014	
Test procedure	i type test	
Procedure deviation	N/A	
Non-standard test method	N/A	GU' P
Test Report Form/blank test report		
Test Report Form No	AGC60825-1A3	
TTRF originator	AGC	
Master TTRF	Dated 2017-01	

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Test item			The acount	The the second
Product designation		Laser pen		C Station of Colorad
Brand name		N/A		
Model Name		MO8097, MO81	93	
Rating(s)		4.5V (Installed 32	X1.5V LR41 batteries)	THE TANK Commence
Protection Class of e	equipment	Class 2	tomparies to the con	plant C Theshold of Ca
Test case verdicts				SU NO.
Test case does not a	apply to the test object.:	N(/A)		
Test item does meet	the requirement:	P(ass)		The mark of the start
Test item does not m	neet the requirement:	F(ail)	F Const Complian 8 5	Ton of Colors
Testing				NO.
Date of receipt of tes	t item:	Apr. 08, 2019		
Date(s) of performan	ce of test:	Apr. 15, 2019		the The at comparise
Attachments	The second	The terminer	C Station of Clobal	C The store of the store
Attachment A		Photos of product		
General remarks	CC The C	C T		
This report shall not b	be reproduced except in	full without the writt	en approval of the testi	ng laboratory.
The test results prese	ented in this report relate	only to the item tes	sted.	adout a Co Messalari
Clause numbers betw	veen brackets refer to cla	auses in IEC 60825	5-1 (EN 60825-1).	NO
"(see remark #)" refe	rs to a remark appended	to the report.		
"(see Annex #)" refer	s to an annex appended	to the report.		The tel Compliance
Throughout this repo	rt a comma is used as th	e decimal separato	r. Find coost com	C These of the set
Report Revise Reco	ord share	Nuestalion"		
Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	1	Apr. 16, 2019	Valid	Initial release
Summary of testing	Los Completion	C Allesation of	por e presidente	<u> </u>
The test part of prod	uct was classified as Cla	ass 2 product.		
Copy of marking pl	ate:		The second second	The Completion Co The sale of
The the second		LASER		and AGC in

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Clause	Requirement – Test	Result	Verdict
4	CLASSIFICATION PRINCIPLES	N	
4.3	Classification rules	100	
4.3 a	Radiation of a single wavelength	The the companies	P
4.3 b	Radiation of multiple wavelengths	C Antestation of Com	N
Attestation of Global Co	1) Laser product emits at two or more wavelengths shown as additive in Table 1		N
AC	2) Laser product emits at two or more wavelengths not shown as additive in Table 1	The the second of the second	N
4.3 c	Radiation from extended sources (see 5.4.3)	C.C.	N
4.3 d	Non-uniform, non-circular or multiple apparent source		N
4.3 e	Time bases	B The sciolad Contract B	En allon of Cloud
- 70	1) 0,25 s	C The GO	N
Compliance	2) 100 s		Р
a.G	3) 30000 s	W T	N N
4.3 f	Repetitively pulsed or modulated lasers	M and C Thesalon of Cont	N
大臣	1) Any single pulse	SC N	O N
Finor Global	2) Average power for pulse trains		N
Para.	3) Pulse duration $t \le T_i$ Number of pulses N and C <sub>5</sub>	F. Isha Contracto	The contract N
0 4	3) Pulse duration t > $T_i$ Number of pulses N and C <sub>5</sub>	Sec.	N
4.4	Laser products designed to function as conventional lamps.		N
	$\alpha$ measured at 200 mm distance from closest point of human access ( $\alpha$ > 5 mrad).	C Annahara Galanta	<b>3C</b> N
Allow Company	Un-weighted radiance L measured at 200 mm distance (comparison with $L_T = 1 \text{ MWm}^{-2}\text{sr}^{-1}/\alpha$ ) under reasonably foreseeable single fault conditions.		N

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EN 60825-1			
Clause	Requirement – Test	Result	Verdict
A Compliance	Evaluation of emission according to IEC 62471 series (optional):		N
	Standard applied (IEC 62471 series)		
	Risk Group	The Constance C The	
	Labelling	C The Sol of the second	
	Classification of product based on accessible laser radiation (if no laser radiation accessible: Class 1).		

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5	DETERMINATION OF THE ACCESSIBLE EMISSION L PRODUCT CLASSIFICATION	EVEL and	107
5.1	Tests	The the state of the state	
	Compliance under reasonably foreseeable single fault conditions.	C. Burning C.C. Burning	Р
5.3	Determination of the class of the laser product: For Class 1C: vertical safety standard applied with requirements for Class 1C.		
5.4	Measurement geometry	CC The CC	
5.4.1	General		
5.4.2	Default (simplified) evaluation	調査	Р
	Conditions applied	3 th score and a start of the score of the s	Р
	Aperture diameter	7mm	Р
© ###	Reference point :	Beam waist	Р
GC *	Measurement distance (for each condition)	100mm	Р
5.4.3	Evaluation condition for extended sources	C Standard Color	NG
the molence	Conditions applied	O E	N
Joona S	Most restrictive position (distance from reference point)	T the man	N
	Angular subtense of the apparent source $\alpha$ and C <sub>6</sub> : (for each condition)		N
5.4.3 a	Aperture diameters (for each condition)		N
5.4.3 b	Angle of acceptance (for each condition)	The the man of the	N
6	ENGINEERING SPECIFICATIONS	C The station of Cloud	Р
6.2	Protective housing	C C	
6.2.1	General		

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	EN 60825-1		
Clause	Requirement – Test	Result	Verdict
HEL THE	Protective housing prevents access to energy levels in excess of the AEL for Class 1.		N
CC *	Protective housing prevents access to energy levels equivalent to Class 4 and withstands exposures under reasonably foreseeable single fault conditions.	A TAB	N
The Ford Canal	Maintenance of Class 1, 1C, 1M, 2, 2M, or 3R (access to emissions of Class 3B or 4 is prevented).	.C BC	Р
Automatica Contraction	Maintenance of Class 3B product (access to emission of Class 4 is prevented).	To the man	N
6.2.2	Service	Contraction of Contraction of Contraction	G N
6.2.3	Removable laser system (laser system complies with requirements of Clauses 6 and 7).	AGO	N The second sec
6.3	Access panels and safety interlocks	Q = F a Colum Comme C # Hono	Goba C
6.3.1	Panel is intended to be removed during operation (or maintenance) and would give access to higher energy levels (see Table 13).	C ACC	N
SCC	Accessible emission (after removal of the panel) corresponds to product Class (designated by "X" in Table 13)	C.C. Burner The Comment	N
Hostory Constant	Emission through the opening if interlocked panel of Class 1, 1C, 1M, 2, or 2M is removed (Emission < AEL of Class 1M or 2M).		N
	Emission through the opening if interlocked panel of Class 3R, 3B, or 4 is removed (Emission < AEL of Class 3R).	CC Same	GCN
CO T	Requirements regarding reasonably foreseeable single fault condition.		N. The
6.3.2	Override mechanism	Haden F Marchan Contra	N
A Company	Behaviour of override in operation when the panel is replaced.	C BACK	N
	Visible or audible warning for override mode.		N
6.4	Remote interlock connector	Find Company ( Com	N <sup>station</sup>
6.5	Manual reset		N N
6.6	Key control		N
6.7	Laser radiation emission warning	The fill and	w
6.7.1	Laser product is a 3R ( $\lambda$ <400 nm; $\lambda$ >700 nm), 1C, 3B or laser systems.		N N
6.7.2	Audible or visible warning.		N
	Warning is failsafe or redundant.	till The the produce	N Karoli

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EN 60825-1			
Clause	Requirement – Test	Result	Verdict
Ka The state	Viewing of the visible warning does not require exposure to emissions > AEL for Class 1M and 2M	NOC D	N
6.7.3	Operational control and laser aperture are provided with a warning device when they are separated more than 2 m from warning device.	The Barrier	The New York
6.7.4	Visible indication of output aperture if laser emission may be distributed through more than one output.	C BO	N
6.7.5	Switch for handheld Class 3R device must be depressed for emission (in lieu of emission indicator).	To Barrier on The Barrier	N F
6.8	Beam stop or attenuator	A Cholon Cart Contract Contract Contract	N
6.9 🛛 🔬	Controls	SC P	N
6.10	Viewing optics		N N
	a) Human access to laser radiation in excess of Class 1M prevented when the shutter is opened or attenuation varied.	CC Rentered	N
Complete Com	b) Opening of the shutter or variation of the attenuation prevented when exposure to laser radiation in excess of Class 1M is possible.		N
6.11	Scanning safeguard	C Massion C	N
6.12	Safeguard for Class 1C products		N
Attestation of Ground	a) Human access to laser radiation in excess of AEL for Class 1 measured under Condition 3 is prevented.	The	N
	b) Human access to laser radiation in excess of AEL for Class 3B measured through 3,5 mm aperture at 5 mm distance from applicator is prevented.	GC Bank	N
6.13	Walk-in access		N
00	a) Means provided so that any person inside the housing can prevent activation of Class 3B or 4 laser hazards.	A THE ADDRESS OF ADDRE	N
the compliance	b) A warning device provides adequate warning of emission to any person within the housing.	C BOC	N
A The	c) Where "walk-in" access during operation is intended or reasonably foreseeable, emission of laser radiation that is equivalent to Class 3B or 4 while someone is present inside the enclosure of Class 1, Class 2 or Class 3R product is prevented by engineering means.	The stand of the s	N
6.14	Environmental conditions		×{
	- climatic conditions	S - F Count Comment 8 - Francis	P
102	- vibration and shock	C C	Р
6.15	Protection against other hazards		
6.15.1	Non-optical hazards (product safety standard)	TILL TA Company	N

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EN 60825-1			
Clause	Requirement – Test	Result	Verdict
He mance	- electrical hazards;		N
R A	- excessive temperature;		N
C PAR	- spread of fire from the equipment;	ALL	N
5	- sound and ultrasonics;	The second comments	N
大学	- harmful substances;	C The State	N
Allestation of Original	- explosion;		N
6.15.2	Collateral radiation	The state of the s	N
6.16	Power limiting circuit	i cholai Cu	Р

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7	LABELLING		111
7.1	General	The Comparison of The Course	
	Labels durable, permanently affixed	See whole product	Р
Hand States	Labels clearly visible		Р
	Reading of labels is possible without exposure to laser radiation in excess of AEL for Class 1.	The The Barning	N
	Colour combination		Р
The sourcement	Labelling impractical due to the size or design of the product.	NOO NOO	Р
Atlestation	Warning label – Hazard symbol (Figure 3)	「「「「「「」」	Р
7.2 - 7.7	Text on explanatory label or pictogram (laser class, warning text)	The sound of the s	6C <sup>P</sup>
7.8	Aperture label		Р
7.9	Radiation output and standards information		
	Max output of laser radiation	10 The Fred Color	N
No. The	Pulse duration	C Martin	N
Slobal Comm	Emitted wavelength(s)		N
2	Name and publication date of the standard	The the marce on The the contained	N
7.10	Labels for access panels	autor of colours	
7.10.1 a) – f)	Labels for panels - warning wording used	NO A	N
7.10.2	Labels for safety interlocked panels - Warning wording used:	a Francisco a Francisco	N
7.11	Warning for invisible laser radiation	C * GC	Р
7.12	Warning for visible laser radiation		N

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	EN 60825-1			
Clause	Requirement – Test	Result	Verdict	
7.13	Warning for potential hazard to the skin or anterior parts of the eye - warning wording used		N	

8	OTHER INFORMATIONAL REQUIREMENTS	· The Completion of the same	n of Glob
8.1	Information for the user	Contraction of Contraction	
The same of Coose	a) adequate instructions for assembly, maintenance and safe use and description of the classification limitations, if appropriate.		Ρ
	b) additional warning for Class 1M and 2M	Const com	Ν
8	c) laser beam parameters for radiation above the AEL of Class 1	Class 2 laser product	
G	Wavelength	650nm	
	Beam divergence:	<1.5mrad	
A mainte	Pulse pattern (pulse duration, repetition rate,)	NO	
	Maximum power or energy output:	1000µW	
G	d) safety instruction for embedded laser products and other incorporated laser products.	C C	Р
Hand and a constant	e) MPE and NOHD for Class 3B and 4 laser products; For collimated beam Class 1M and 2M lasers the extended NOHD (ENOHD).		Ν
	f) information for the selection of eye protection.	ion of Clonel Control of States upon the	Ν
	g) reproduction of all required labels and warnings.		Ν
C AN	h) location of laser apertures		Ν
00	i) list of controls, adjustments of procedures for operation and maintenance - and warning statement.	A T A MANA	Ν
The Company	j) information (compatibility requirements) about laser energy source if not incorporated.	C P	Ν
1	k) additional warning for Class 1, 1M, 2, 2M, and 3R regarding skin or corneal burns.	The the man	Ν
56	I) Information for Class 1C products (e.g. warning that repeated application may pose a risk).	GC BC	Ν
8.2	Purchasing and service information		Ν
. Per-	a) safety classification of each laser product stated in all descriptive material (e.g. brochures).	· · · · · · · · · · · · · · · · · · ·	Ν

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EN 60825-1								
Clause	Requirement – Test	Result	Verdict					
Ha mance	b) adequate instructions for servicing available:		N					
	warnings and precautions regarding exposure of lase emission above Class 1							
	maintenance schedule	The state of the state						
	list of controls and procedures that could increase accessible emissions	C Transferration NGC "						
	description of displaceable parts							
	protective procedures for service personnel	The the manage						
	reproduction of labels and hazard warnings	and Coold C Residen of Cool						

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9	ADDITIONAL REQUIREMENTS FOR SPECIFIC LASER	PRODUCTS	- All
9.1	Applicable other parts of the standard series IEC 60825	E Goba Company B Frond Colorado	
THIS THE	IEC 60825-2 (Safety of optical communication systems)	S CO	Ν
Co. ®	IEC 60825-4 (Laser guards)	The second se	Ν
SC	IEC 60825-12 (Safety of free space optical communication systems used for transmission of information)	CO The CO	N
9.2	Medical laser products: Class 3B and Class 4 medical laser products comply with IEC 60601-2-22		N
9.3	Laser processing machines: Comply with IEC/ISO 11553 series.	Enstruction of Contraction	Ν
9.4	Electric toys: Comply with IEC 62115		N
9.5	Consumer electronic products: Comply with IEC 60950 (IT-equipment) or IEC 60065 (AV equipment)	o at the stand of the stand	N

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			EN 60825-	1	
lause	Requirement – Test			Result	Verdi
easured a	ccessible laser radiation an	nd compai	rison with AEL:	- GU - GU	
<b>Measurir</b> The radian Measurem <b>Measure</b>	ng condition It power is measured under Itent condition 3 is measured Itent condition 3 is measured	r normal c d.	condition.		
ne LED ch	anged frequently, The max	. power is	s recorded.		
ne LED ch Ambient	anged frequently, The max temperature:	. power is 24°C	s recorded.	AGO A	Р
ne LED ch Ambient Ambient	anged frequently, The max temperature: radiation:	24°C 58.7nW meter	s recorded.	with "zero" function of power	P
Ambient Ambient Ambient	anged frequently, The max temperature: tradiation: ement	24°C 58.7nW meter	s recorded. compensated Input current	with "zero" function of power Measured radiant power	P — Limited(AEL)
Ambient Ambient Ambient Measure Normal o	anged frequently, The max temperature: tradiation: ement condition(red)	a. power is 24°C 58.7nW meter	s recorded. compensated Input current	with "zero" function of power Measured radiant power 417.25µW	P — Limited(AEL) 1000µW
Ambient Ambient Measure Normal o Fault co	aanged frequently, The max temperature: tradiation: ement condition(red)	a. power is 24°C 58.7nW meter	s recorded. compensated Input current 	with "zero" function of power Measured radiant power 417.25µW	P — Limited(AEL) 1000µW

### 3. Classification

The test part of product is classified as Class 2.

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## Attachment A



s os do so eo 10 so ao 100 10 so ao 40 so eo 10 so ao 60 50 so ao 500 10 so ao 40 so eo 10 so ao 300 10 so ao 40 s

Fig.2. - overview

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Fig.4. -partview

---End of Report---

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