

TEST REPORT

Applicant: MID OCEAN BRANDS BV
UNIT 201 2/F LAFORD CTR
838 LAI CHI KOK RD
CHEUNG SHA WAN KLN
HK

Number: HKGH02220735

Date: Nov 30, 2017

Attn: DEREK HUI

Submitted sample said to be :
Item Name : **Keyring with reflective vest**
Model No. : **MO9199**
Quantity : Seven pieces
Vendor : 107961
Buyer : Mid Ocean
Country of Origin : China



Conclusion:

The submitted sample was tested under the following requirements requested by the applicant, subject to the information stated in the remark and attached page(s) for details :

<u>Requirement</u>	<u>Result</u>
(1) BS EN 13356:2001 Visibility accessories for non-professional use - Test methods and requirements	Pass

For and on behalf of :
Intertek Testing Services HK Ltd.

Angel Y.F. Cheung
Vice President



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(1) Performance Tests for Visibility Accessories for Non-Professional Use

Test Standard : BS EN 13356:2001 Visibility accessories for non-professional use - Test methods and requirements

Number of samples tested: Five (5) pieces.

Type of accessories: Flexible, Type 1 - Free hanging

Clause	Requirement	Result
4	Requirements for accessories	
4.1	General requirements	P
4.2	Specific requirements for different types of accessories	
4.2.1	General	P
4.2.2	Photometric requirements	P
4.2.3	Abrasion resistance (brush resistance)	P
4.2.4	Washing and dry cleaning requirements	NA
4.2.5	Durability against heat	P
4.2.6	Low temperature requirements (folding)	P
4.2.7	Exposure to water	NA
4.2.8	Influence to rainfall	P
6	Marking	NR
7	Manufacture information for use	NR

Abbreviation : P = Pass; NA= Not Applicable; NR= Not Requested by Applicant

Test data:

Clause 4.1 General requirements

Area of reflective material (cm ²)	Thickness (mm)	Area requirement
≈ 16.0	6.0	Type 1 accessory shall be between 15 - 50 cm ² per side. Type 1 accessory that is only retro-reflective from two sides shall have a maximum thickness of 10 mm.



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Clause 4.2.2 / Photometric test (as received)

Observation angle, α	Entrance angle, β		Requirement (R) (mcd/lx)	Measured value (R) (mcd/lx)	
	β_1	β_2		Side 1	Side 2
0.2°	0°	+5°	560	806	810
	0°	-5°	560	858	882
	+10°	0°	350	896	878
	-10°	0°	350	861	830
	0°	+20°	280	456	467
	0°	-20°	280	509	478
0.33°	0°	+5°	400	659	619
	0°	-5°	400	666	642
	+10°	0°	250	672	645
	-10°	0°	250	630	608
	0°	+20°	200	387	374
	0°	-20°	200	440	408
1.5°	0°	+5°	20	20.2	20.1
	0°	-5°	20	22.4	21.3
	+10°	0°	10	22.6	21.6
	-10°	0°	10	25.0	22.9
	0°	+20°	10	17.1	15.6
	0°	-20°	10	15.8	18.6



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Clause 4.2.3 / Photometric test after test exposure 1 (5.3 Abrasion test)

Observation angle, α	Entrance angle, β		Requirement (R) (mcd/lx)	Measured value (R) (mcd/lx)	
	β_1	β_2		Side 1	Side 2
0.2°	0°	+5°	560	728	755
	0°	-5°	560	802	827
	+10°	0°	350	801	852
	-10°	0°	350	760	819
	0°	+20°	280	381	412
	0°	-20°	280	461	520
0.33°	0°	+5°	400	574	606
	0°	-5°	400	585	606
	+10°	0°	250	595	627
	-10°	0°	250	523	590
	0°	+20°	200	330	357
	0°	-20°	200	411	443
1.5°	0°	+5°	20	20.0	20.5
	0°	-5°	20	22.4	21.2
	+10°	0°	10	18.4	19.0
	-10°	0°	10	19.4	20.3
	0°	+20°	10	13.5	14.1
	0°	-20°	10	18.1	15.6



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Clause 4.2.6 / Photometric test after test exposure 2 (5.5.1 Low temperature requirements -folding)

Observation angle, α	Entrance angle, β		Requirement (R) (mcd/lx)	Measured value (R) (mcd/lx)	
	β_1	β_2		Side 1	Side 2
0.2°	0°	+5°	560	804	777
	0°	-5°	560	894	778
	+10°	0°	350	920	804
	-10°	0°	350	876	785
	0°	+20°	280	414	420
	0°	-20°	280	530	472
0.33°	0°	+5°	400	630	564
	0°	-5°	400	612	562
	+10°	0°	250	620	579
	-10°	0°	250	614	569
	0°	+20°	200	323	328
	0°	-20°	200	414	383
1.5°	0°	+5°	20	20.8	20.9
	0°	-5°	20	21.5	20.3
	+10°	0°	10	20.6	19.8
	-10°	0°	10	18.7	20.8
	0°	+20°	10	12.9	14.4
	0°	-20°	10	16.0	17.4



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Clause 4.2.5 / Photometric test after test exposure 3 (5.6.2 Durability against heat -exposure to temperature variation for flexible accessories)

Observation angle, α	Entrance angle, β		Requirement (R) (mcd/lx)	Measured value (R) (mcd/lx)	
	β_1	β_2		Side 1	Side 2
0.2°	0°	+5°	560	1078	1060
	0°	-5°	560	1066	1139
	+10°	0°	350	1142	1115
	-10°	0°	350	1123	1105
	0°	+20°	280	702	590
	0°	-20°	280	649	689
0.33°	0°	+5°	400	804	777
	0°	-5°	400	755	768
	+10°	0°	250	785	768
	-10°	0°	250	786	752
	0°	+20°	200	537	458
	0°	-20°	200	518	525
1.5°	0°	+5°	20	20.1	21.4
	0°	-5°	20	20.5	22.8
	+10°	0°	10	20.0	22.7
	-10°	0°	10	21.2	29.1
	0°	+20°	10	14.2	16.8
	0°	-20°	10	16.3	16.5



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Clause 4.2.8 / Photometric test after test exposure 4 (5.7.2 Influence to rainfall)

Observation angle, α	Entrance angle, β		Requirement (R) (mcd/lx)	Measured value (R) (mcd/lx)	
	β_1	β_2		Side 1	Side 2
0.2°	0°	+5°	560	614	625
	0°	-5°	560	669	650
	+10°	0°	350	603	598
	-10°	0°	350	616	610
	0°	+20°	280	355	360
	0°	-20°	280	449	460
0.33°	0°	+5°	400	499	485
	0°	-5°	400	445	452
	+10°	0°	250	451	440
	-10°	0°	250	493	495
	0°	+20°	200	322	326
	0°	-20°	200	338	337
1.5°	0°	+5°	20	20.0	20.2
	0°	-5°	20	24.2	22.1
	+10°	0°	10	20.2	20.0
	-10°	0°	10	20.3	20.2
	0°	+20°	10	16.5	15.7
	0°	-20°	10	13.7	14.8

Date sample received : Nov 16, 2017
 Testing period : Nov 16, 2017 to Nov 29, 2017

End of report

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