



	Test report n.	134-QL17-R03 ver. 0	
	Applicant	LARES di Claudio Lerici Regione Viazzi, 6 15010 Castelletto d'Erro (AL)	
	EUT/Type	Reflecting sheets O03, R03, W03	

TEST REPORT Nr. 134-QL17-R03 ver. 0

Addresses Indirizzi		
Applicant Richiedente	LARES di Claudio Lerici - Regione Viazzi, 6 - 15010 Castelletto d'Erro (AL)	
Manufacturer Produttore	Same as applicant / Come il richiedente	
Test laboratory Laboratorio di prova	Qualilab s.r.l. Via Trento, 87 25020 – Capriano del Colle (BS)	
Dates and authorization Date e autorizzazioni		
EUT acceptance date Data accettazione campioni	Simultaneously with the beginning of the test. Contestualmente all'inizio delle prove.	
Report Date Data preparazione rapporto di prova	28/02/2017	
Authorization Autorizzazioni	Ing. Carsten Seyring Test engineer	
	Ing. Michele Peschiera Reviewer	 
Equipment under test EUT (data declared by the applicant) Dispositivo sottoposto a prova EUT (Dati forniti dal richiedente)		
EUT description Descrizione EUT	Reflecting sheets	
Type Modello	LARES O03 – amber LARES W03 – white LARES R03 - red	
Marking Marcature	-	
Applicable norms Norme applicabili		
	CIE 54.2 – Retroreflection: definition and measurement, ECE R03 and FMVSS108	



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I risultati e le osservazioni indicate in questo rapporto di prova sono riferite esclusivamente ai campioni testati. Non è permesso utilizzare i risultati e le osservazioni di questo rapporto di prova per altri sistemi o configurazioni. Non è permessa la pubblicazione o la duplicazione completa o parziale di questo rapporto di prova e dei suoi allegati senza un consenso scritto da parte del laboratorio di prova. Il laboratorio di prova non si assume responsabilità nei confronti di terzi per danni o eventuali costi derivanti dall'utilizzo dei dati presenti in questo rapporto di prova. Ogni uso del nome del laboratorio di prova e dei suoi marchi per la vendita o per pubblicizzare il prodotto testato deve essere prima approvato in forma scritta dal laboratorio di prova. In caso di rapporti di prova con più lingue, la versione inglese è da considerarsi quella ufficiale.

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Test Name Identificazione prova	Test Procedure Procedura di prova	Test Requirement Requisito di prova	Test Result Esito Prova
LARES O03	CIL measurement in accordance to CIE 54.2, ECE R3 and FMVSS108	n.a.	See Annex
LARES W03	CIL measurement in accordance to CIE 54.2, ECE R3 and FMVSS108	n.a.	See Annex
LARES R03	CIL measurement in accordance to CIE 54.2, ECE R3 and FMVSS108	n.a.	See Annex

Uncertainty Incertezza	
Photometric parameter Parametri fotometrici	Coefficient of retroreflection: 3,3% Coefficiente di retroriflessione
Statement Dichiarazione	<p>The measured value (y) and the associated expanded uncertainty (U) represent the interval (y±U) which contains the value of the measured quantity with a probability of approximately 95 % and a coverage factor $k = 2$.</p> <p>Il valore misurato (y) e l'incertezza estesa associata (U) rappresentano l'intervallo (y±U) che contiene il valore della grandezza misurata con una probabilità di circa il 95% e un fattore di copertura $k=2$.</p>

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APPENDIX I	LARES O03 - amber
Norm and applicable points	CIE 54.2, ECE R3 and FMVSS108
Sample identification	134-QL17-S03
Place of testing	QUALILAB s.r.l. Via Trento, 87 25020 – Capriano del Colle (BS)
Test date	21/02/2017
Environmental conditions	Temperature 23°C±3°C
Instruments	Goniometer LMT GOH1200 QL-IN-002 Retro Unit LMT RETRO 2000 QL-IN-008
Test procedure	The sample was prepared, stabilized and measured like defined in ECE R 3 and FMVSS08
Test requirements	n.a.
Test measurement	The sample was mounted onto the test stand, provided by the manufacturer. The sample was illuminated with standard illuminant A. The sample was installed perpendicular to the light source. Afterwards the grid, given in the ECE R3 and FMVSS108, was measured.
TEST RESULT	

ECE R03

Functions	R [mcd/lx]	Unit
0.333 at H - V	1680	mcd/lx
0.333 at H - 10U	1641	mcd/lx
0.333 at H - 10D	1631	mcd/lx
0.333 at 20R - 5U	1595	mcd/lx
0.333 at 20R - 5D	1601	mcd/lx
0.333 at 20L - 5U	1600	mcd/lx
0.333 at 20L - 5D	1594	mcd/lx
1.500 at H - V	156,7	mcd/lx
1.500 at H - 10U	130,8	mcd/lx
1.500 at H - 10D	133,5	mcd/lx
1.500 at 20R - 5U	133,0	mcd/lx
1.500 at 20R - 5D	135,1	mcd/lx
1.500 at 20L - 5U	132,5	mcd/lx
1.500 at 20L - 5D	134,5	mcd/lx

FMVSS108

Functions	R [mcd/lx]	Unit
0.200 at H - V	2386	mcd/lx
0.200 at H - 10U	2337	mcd/lx
0.200 at H - 10D	2307	mcd/lx
0.200 at 20L - V	2267	mcd/lx
0.200 at 20R - V	2277	mcd/lx
1.500 at H - V	156,6	mcd/lx
1.500 at H - 10U	131,1	mcd/lx
1.500 at H - 10D	133,3	mcd/lx
1.500 at 20L - V	134,8	mcd/lx
1.500 at 20R - V	135,7	mcd/lx

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APPENDIX II	LARES W03 - white
Norm and applicable points	CIE 54.2, ECE R3 and FMVSS108
Sample identification	134-QL17-S04
Place of testing	QUALILAB s.r.l. Via Trento, 87 25020 – Capriano del Colle (BS)
Test date	21/02/2017
Environmental conditions	Temperature 23°C±3°C
Instruments	Goniometer LMT GOH1200 QL-IN-002 Retro Unit LMT RETRO 2000 QL-IN-008
Test procedure	The sample was prepared, stabilized and measured like defined in ECE R 3 and FMVSS08
Test requirements	n.a.
Test measurement	The sample was mounted onto the test stand, provided by the manufacturer. The sample was illuminated with standard illuminant A. The sample was installed perpendicular to the light source. Afterwards the grid, given in the ECE R3 and FMVSS108, was measured.
TEST RESULT	

ECE R03

Functions	R [mcd/lx]	Unit
0.333 at H - V	2246	mcd/lx
0.333 at H - 10U	2187	mcd/lx
0.333 at H - 10D	2217	mcd/lx
0.333 at 20R - 5U	2108	mcd/lx
0.333 at 20R - 5D	2118	mcd/lx
0.333 at 20L - 5U	2107	mcd/lx
0.333 at 20L - 5D	2107	mcd/lx
1.500 at H - V	141,8	mcd/lx
1.500 at H - 10U	135,3	mcd/lx
1.500 at H - 10D	135,2	mcd/lx
1.500 at 20R - 5U	137,5	mcd/lx
1.500 at 20R - 5D	140,2	mcd/lx
1.500 at 20L - 5U	137,3	mcd/lx
1.500 at 20L - 5D	140,2	mcd/lx

FMVSS108

Functions	R [mcd/lx]	Unit
0.200 at H - V	3066	mcd/lx
0.200 at H - 10U	2987	mcd/lx
0.200 at H - 10D	3017	mcd/lx
0.200 at 20L - V	2897	mcd/lx
0.200 at 20R - V	2887	mcd/lx
1.500 at H - V	141,7	mcd/lx
1.500 at H - 10U	135,2	mcd/lx
1.500 at H - 10D	135,4	mcd/lx
1.500 at 20L - V	140,6	mcd/lx
1.500 at 20R - V	140,9	mcd/lx

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APPENDIX III	LARES R03 - red
Norm and applicable points	CIE 54.2, ECE R3 and FMVSS108
Sample identification	134-QL17-S05
Place of testing	QUALILAB s.r.l. Via Trento, 87 25020 – Capriano del Colle (BS)
Test date	21/02/2017
Environmental conditions	Temperature 23°C±3°C
Instruments	Goniometer LMT GOH1200 QL-IN-002 Retro Unit LMT RETRO 2000 QL-IN-008
Test procedure	The sample was prepared, stabilized and measured like defined in ECE R 3 and FMVSS08
Test requirements	n.a.
Test measurement	The sample was mounted onto the test stand, provided by the manufacturer. The sample was illuminated with standard illuminant A. The sample was installed perpendicular to the light source. Afterwards the grid, given in the ECE R3 and FMVSS108, was measured.
TEST RESULT	

ECE R03

Functions	R [mcd/lx]	Unit
0.333 at H - V	539,2	mcd/lx
0.333 at H - 10U	479,7	mcd/lx
0.333 at H - 10D	484,6	mcd/lx
0.333 at 20R - 5U	456,0	mcd/lx
0.333 at 20R - 5D	459,0	mcd/lx
0.333 at 20L - 5U	456,9	mcd/lx
0.333 at 20L - 5D	458,9	mcd/lx
1.500 at H - V	46,0	mcd/lx
1.500 at H - 10U	34,2	mcd/lx
1.500 at H - 10D	35,1	mcd/lx
1.500 at 20R - 5U	33,5	mcd/lx
1.500 at 20R - 5D	34,2	mcd/lx
1.500 at 20L - 5U	33,6	mcd/lx
1.500 at 20L - 5D	34,1	mcd/lx

FMVSS108

Functions	R [mcd/lx]	Unit
0.200 at H - V	700,1	mcd/lx
0.200 at H - 10U	627,5	mcd/lx
0.200 at H - 10D	632,5	mcd/lx
0.200 at 20L - V	600,8	mcd/lx
0.200 at 20R - V	599,9	mcd/lx
1.500 at H - V	45,9	mcd/lx
1.500 at H - 10U	34,2	mcd/lx
1.500 at H - 10D	35,1	mcd/lx
1.500 at 20L - V	34,2	mcd/lx
1.500 at 20R - V	34,1	mcd/lx

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APPENDIX IV

Photographs

