





Project No: 10112751  
Report No: 10112751-3  
Issued Date: 2013-DEC-17  
Revision:

## Verification Services Test Report

Customer Company & Address
ARTEMIDE S.P.A. Via Bergamo 18 20010 Pregnana Milanese (MI)

<b>Manufacturer:</b>	Artemide S.P.A.
<b>Country of Origin:</b>	Italy
<b>Country of Export:</b>	N/A
<b>Product Category:</b>	REZEK
<b>Product Description:</b>	Surface-mounted LED luminaire with opal glass cover
<b>Model Number(s):</b>	USC-RD502401
<b>LED model:</b>	SEOUL SEMICONDUCTOR Mod: STW8Q2PA
<b>Power supply:</b>	HIGH PERFECTION TECH Mod: LP1020-36-C0500
<b>Electrical Ratings:</b>	120 V 60 Hz
<b>Test Sample(s) Received Date:</b>	2013-DEC-06
<b>Test Period:</b>	2013-DEC-16 to 2013-DEC-17
<b>The Sample(s) is(are) tested in accordance with the following:</b>	
IES LM-79-08	

Prepared By	Approved By
Giovanni Di Martino 	Walter Parmiani 
<b>Name &amp; Signatory</b>	<b>Name &amp; Signatory</b>

**This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report apply to the test sample(s) mentioned above at the time of the testing period only and are not to be used to indicate applicability to other similar products. This report does not imply that the product(s) has met the criteria for certification.**





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### Statement of Results

Test Flow	Test Method	Sample ID	Test Result
1.	Goniophotometer	023114-S001	Evaluated by Customer
2.	Integrating Sphere	023114-S001	Evaluated by Customer

### Measurement Uncertainty

N/A

### Deviation from Test Method (if any)

N/A

### Remarks (if any)

This report extends to the 230 V 50 Hz version of this product also.



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### Test No. 1: Goniophotometer

**Sample ID / Test Round Number**

023114-S001 / 1

**Environmental Conditions**

Ambient Temperature
25 °C

**Test Equipment**

Local ID	Description	Model	Last cal	Next cal
BURVS0074	Goniophotometer system	LSI 6440T	09/dec/2013	By evidence
BURVS0078	AC PSU	ELGAR CW 1251	Reference only	Reference only
BURVS0077	Digital power meter	Yokogawa WT210	16/jul/2013	28/jul/2014
BURVS0079	THERMOMETER	OMEGA MDSi8	19/aug/2013	28/aug/2014
BURVS0119	OMNIDIRECTIONAL CALIBRATION LAMP	STS STD-EHD 12C050	25/jun/2012	25/jun/2015

**Test Condition(s)**

Input Voltage	Input Current	Input Power	Power Factor
119.99 V	0.11 A	13.01 W	0.98

**Test Results**

Result Name	Result
Test Date	2013-DEC-16 04:50:00 PM
Luminous Flux	499.0 lm
Luminous Efficacy	38.4 lm/W
Luminous Opening Length	15.7 in.
Luminous Opening Width	0.0 "
Luminous Opening Height	3.2 "



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### Test No. 2: Integrating Sphere

#### Sample ID / Test Round Number

023114-S001 / 1

#### Environmental Conditions

Ambient Temperature
25.6 °C

#### Test Equipment

Local ID	Description	Model	Last cal	Next cal
BURVS0053	INTEGRATING SPHERE	LABSPHERE 2m INTEGRATING SPHERE	13/nov/2013	By evidence
BURVS0058	SPECTRORADIOMETER	LABSPHERE CDS-1100	13/nov/2013	By evidence
BURVS0062	AC PSU	CHROMA 61603	Reference only	Reference only
BURVS0059	DIGITAL POWER METER	YOKOGAWA WT210	23/jul/2013	28/jul/2014
BURVS0054	THERMOMETER	OMEGA MDSi8	19/aug/2013	28/aug/2014
BURVS0060	75W OMNIDIRECTIONAL CALIBRATION LAMP	EYE LIGHTING SCL1400 (JDV28V75W)	11/apr/2012	11/apr/2015

#### Test Condition(s)

Base Orientation	Input Voltage	Input Current	Input Power	Power Factor
Base Up	120.00 V	0.111 A	12.98 W	0.98



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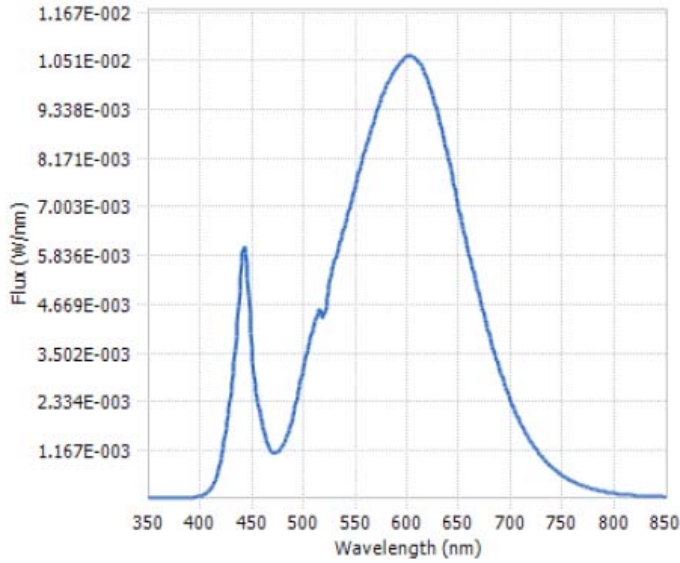
### Test Results

Result Name	Result
Test Time Point	2013-DEC-16 11:15:00 AM Hrs
CCT	2980 K
CRI (Ra)	78.32
CRI (R9)	4.8
Duv	0.0015
x	0.4407
y	0.4096
u'	0.2506
v'	0.5241



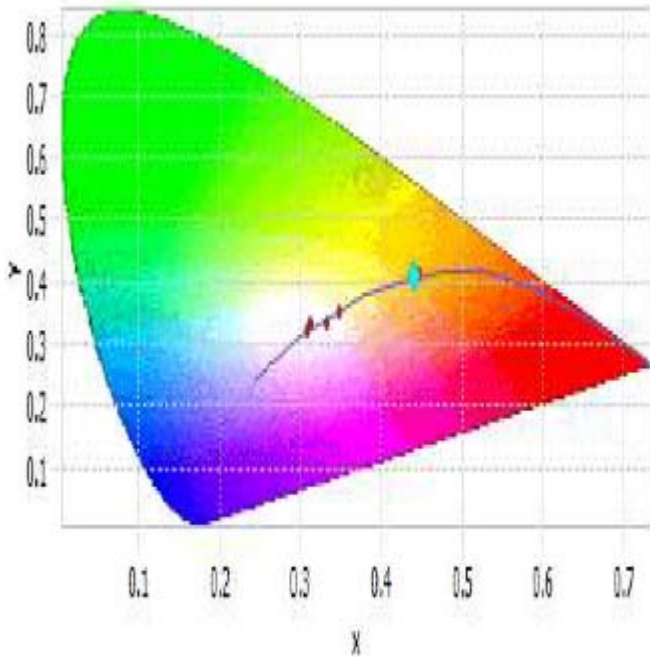
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## Spectral power distribution



## Chromaticity diagram

CIE 1931, 2 Degree





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### Photo of Sample(s)

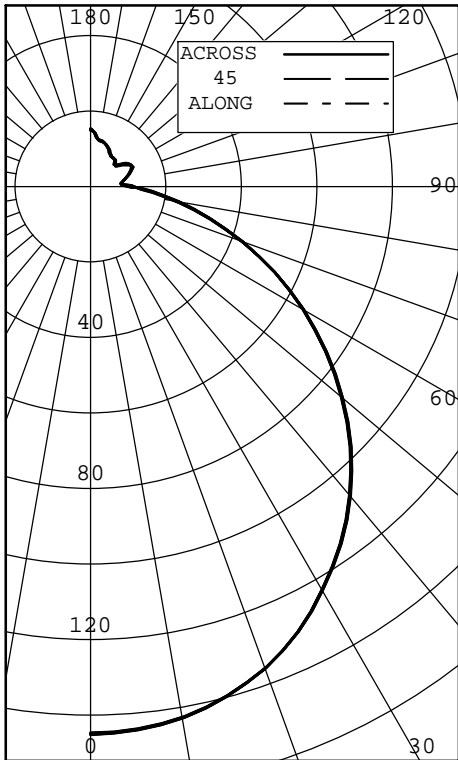
Sample



ARTEMIDE, CAT# USC-RD502401  
 REZEK  
 LED, CAT# LED. LUMINAIRE OUTPUT = 499 LMS.  
 OPERATING AT 120 V 60 Hz 13 W

INTENSITY (CANDLEPOWER) SUMMARY

ANGLE	MEAN CP	LMS.	ANGLE	MEAN CP	LMS.
0	145		90	11	
5	144	14	95	8	10
10	143		100	9	
15	140	39	105	10	11
20	136		110	11	
25	130	60	115	12	12
30	123		120	12	
35	116	72	125	10	9
40	107		130	9	
45	97	75	135	9	7
50	87		140	10	
55	76	68	145	10	6
60	65		150	10	
65	54	53	155	11	5
70	43		160	12	
75	33	35	165	12	3
80	24		170	13	
85	16	18	175	14	1
90	11		180	15	



ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	113	22.66
0-40	185	37.11
0-60	328	65.73
0-90	435	87.03
40-90	249	49.93
60-90	106	21.31
90-180	65	12.97
0-180	499	100.00

EFFICACY (LUMENS PER WATT): 38.4

\*\*\* THIS IS AN ABSOLUTE TEST \*\*\*

LUMINOUS DIAMETER: 15.740 INS

LUMINANCE SUMMARY - CD./SQ.M.

ANGLE	MEAN CD/SQ M
45	1101
55	1061
65	1021
75	1013
85	1509

CERTIFIED BY:

DATE:  
 DEC 16, 2013

PREPARED FOR:

ARTEMIDE  
 ITALY

TESTED IN ACCORDANCE WITH IES PROCEDURES.



UL INTERNATIONAL ITALIA SRL  
VIA XXV APRILE 3/B  
BURAGO DI MOLGORA, ITALY, ITALY 20875

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REZEK  
LED, CAT# LED. LUMINAIRE OUTPUT = 499 LMS.  
OPERATING AT 120 V 60 Hz 13 W

INTENSITY(CANDLEPOWER) DATA

ANGLE	INTENSITY (CANDLEPOWER)	LUMENS
0	145	
5	144	14
10	143	
15	140	39
20	136	
25	130	60
30	123	
35	116	72
40	107	
45	97	75
50	87	
55	76	68
60	65	
65	54	53
70	43	
75	33	35
80	24	
85	16	18
90	11	
95	8	10
100	9	
105	10	11
110	11	
115	12	12
120	12	
125	10	9
130	9	
135	9	7
140	10	
145	10	6
150	10	
155	11	5
160	12	
165	12	3
170	13	
175	14	1
180	15	

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AVERAGE LUMINANCE DATA

CD./SQ.M (FOOTLAMBERTS)

ANGLE	LUMINANCE
0	1154 ( 337)
30	1132 ( 330)
40	1111 ( 324)
45	1101 ( 321)
50	1078 ( 314)
55	1061 ( 309)
60	1036 ( 302)
65	1021 ( 298)
70	1001 ( 292)
75	1013 ( 295)
80	1095 ( 319)
85	1509 ( 440)

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COEFFICIENTS OF UTILIZATION

ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE = .20

CC WALL	90				80				70				50				30				10				0
	70	50	30	10	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0			
RCR																									
0	1.201	.201	.201	.20	1.161	.161	.161	.16	1.121	.121	.121	.12	1.041	.041	.04	0.970	.970	.97	0.900	.900	.90	0.87			
1	1.101	.040	.990	.95	1.061	.010	.960	.93	1.020	.970	.930	.90	0.910	.870	.85	0.840	.820	.80	0.790	.770	.75	0.72			
2	1.000	.920	.840	.78	0.960	.880	.820	.76	0.930	.850	.790	.74	0.800	.750	.71	0.750	.710	.67	0.700	.670	.64	0.61			
3	0.910	.800	.720	.65	0.880	.780	.700	.64	0.850	.750	.680	.62	0.710	.650	.60	0.660	.610	.57	0.620	.580	.54	0.52			
4	0.840	.720	.620	.56	0.810	.700	.610	.55	0.780	.670	.600	.54	0.630	.570	.52	0.590	.540	.50	0.560	.510	.48	0.45			
5	0.780	.640	.550	.48	0.740	.620	.530	.47	0.710	.600	.520	.46	0.570	.500	.44	0.530	.470	.43	0.500	.450	.41	0.39			
6	0.710	.570	.480	.42	0.690	.560	.470	.41	0.660	.540	.460	.40	0.510	.440	.39	0.480	.420	.37	0.450	.400	.36	0.34			
7	0.650	.510	.420	.36	0.630	.500	.410	.35	0.610	.480	.400	.35	0.460	.380	.33	0.430	.370	.32	0.410	.350	.31	0.29			
8	0.610	.460	.380	.32	0.580	.450	.370	.31	0.560	.440	.360	.30	0.410	.340	.30	0.390	.330	.29	0.370	.320	.28	0.26			
9	0.560	.420	.330	.28	0.540	.410	.330	.27	0.520	.400	.320	.27	0.380	.310	.26	0.360	.300	.25	0.340	.280	.24	0.22			
10	0.520	.380	.300	.25	0.500	.370	.290	.24	0.480	.360	.290	.24	0.340	.280	.23	0.330	.270	.22	0.310	.260	.22	0.20			

THE ABOVE COEFFICIENTS HAVE BEEN CALCULATED BASED ON LUMINAIRE LUMENS  
BECAUSE IN AN ABSOLUTE TEST THE BARE LAMP LUMENS ARE UNKNOWN.  
LIGHTING DESIGN CALCULATIONS MADE USING THESE COEFFICIENTS SHOULD  
THEREFORE USE THE LUMINAIRE LUMENS IN THE CALCULATION FORMULA

LUMINAIRE INPUT WATTS 13.0

LABORATORY RESULTS MAY NOT BE REPRESENTATIVE OF FIELD PERFORMANCE.  
BALLAST AND FIELD FACTORS HAVE NOT BEEN APPLIED.

TEST DISTANCE EXCEEDS FIVE TIMES THE GREATEST  
LUMINOUS OPENING OF LUMINAIRE.

UL INTERNATIONAL ITALIA SRL  
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CONE OF LIGHT  
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MOUNTING HEIGHT ABOVE WORK PLANE (FT)	INITIAL FC AT NADIR -FCN (FC)	.1*FCN (FC)	10% LIGHTED DIAMETER (FT)	.5*FCN (FC)	50% LIGHTED DIAMETER (FT)
1	145.0	14.5	2.8	72.5	1.3
2	36.2	3.6	5.7	18.1	2.5
3	16.1	1.6	8.5	8.1	3.8
4	9.1	0.9	11.4	4.5	5.0
5	5.8	0.6	14.2	2.9	6.3
6	4.0	0.4	17.1	2.0	7.5
7	3.0	0.3	19.9	1.5	8.8
8	2.3	0.2	22.8	1.1	10.1

10% CONE ANGLE: 109.8 DEGREES  
 50% CONE ANGLE: 64.3 DEGREES