





Project No: 10232012
Report No: 10232012-1
Issued Date: 2014-FEB-26
Revision:

Verification Services Test Report

Customer Company & Address
POLELED B.V Nudepark 146 6702 DX Wageningen

Manufacturer:	POLELED B.V.
Country of Origin:	Nederlands
Country of Export:	N/A
Product Category:	BASIC
Product Description:	LED Luminaire
Model Number(s):	BASIC
Electrical Ratings:	24 V DC
Test Sample(s) Received Date:	2014-FEB-24
Test Period:	2014-FEB-24 to 2014-FEB-25
The Sample(s) is(are) tested in accordance with the following:	
IES Im-79-08	

Prepared By	Approved By
Giovanni Di Martino 	Walter Parmiani 
Name & Signatory	Name & Signatory

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.



UL International Italia S.r.l.
Via XXV Aprile 3/B
20875 Burago di Molgora (MB) Italy



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Statement of Results

Test Flow	Test Method	Sample ID	Test Result
1.	Goniophotometer	027738-S001	Evaluated by Customer
2.	Integrating Sphere	027738-S001	Evaluated by Customer

Measurement Uncertainty

N/A

Deviation from Test Method *(if any)*

N/A

Remarks *(if any)*

N/A



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Test No. 1: Goniophotometer

Sample ID / Test Round Number

027738-S001 / 1

Environmental Conditions

Ambient Temperature
24 °C

Test Equipment

Local ID	Description	Model	Last cal	Next cal
BURVS0063	Goniophotometer system	LSI 6440T	21/jan/2014	By evidence
BURVS0065	Digital power meter	Yokogawa WT210	16/jul/2013	28/jul/2014
BURVS0067	THERMOMETER	OMEGA MDSi8	19/aug/2013	28/aug/2014
BURVS0119	OMNIDIRECTIONAL CALIBRATION LAMP	STS STD-EHD	25/jun/2012	25/jun/2015

Test Condition(s)

Input Voltage	Input Current	Input Power	Power Factor
24.04 V	1.58 A	37.90 W	1

Test Results

Result Name	Result
Test Date	2014-FEB-24 05:00:00 PM
Luminous Flux	3254.0 lm
Luminous Efficacy	85.9 lm/W
Luminous Opening Length	10.2 in.
Luminous Opening Width	0.0 "
Luminous Opening Height	0.0 "



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Test No. 2: Integrating Sphere

Sample ID / Test Round Number

027738-S001 / 1

Environmental Conditions

Ambient Temperature
24.6 °C

Test Equipment

Local ID	Description	Model	Last cal	Next cal
BURVS0053	INTEGRATING SPHERE	LABSPHERE 2m INTEGRATING SPHERE	17/jan/2014	By evidence
BURVS0058	SPECTRORADIOMETER	LABSPHERE CDS-1100	17/jan/2014	By evidence
S572	PORTABLE MULTIMETER	FLUKE	28/sept/2013	28/sept/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	24 V	1.549 A	37.176 W	1



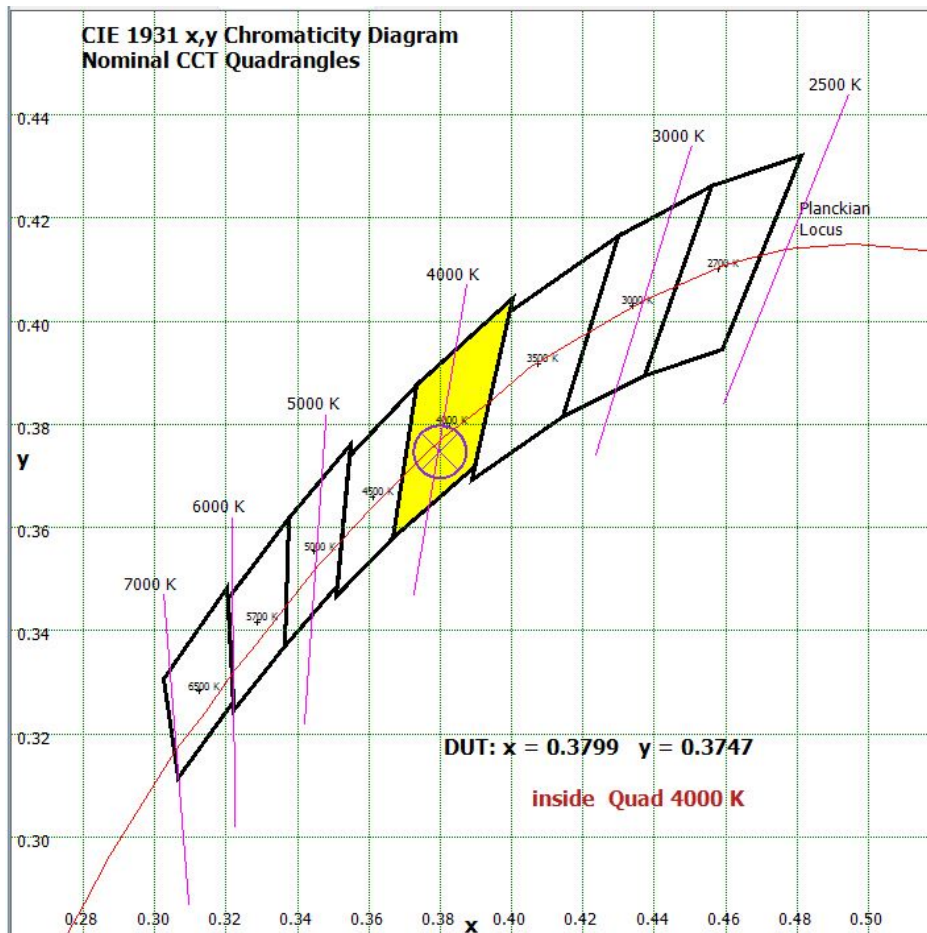
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Test Results

Result Name	Result
Test Time Point	2014-FEB-24 02:00:00 PM Hrs
CCT	3997 K
CRI (Ra)	82.02
CRI (R9)	13
Duv	0.0008
x	0.3799
y	0.3747
u'	0.2255
v'	0.5006

CCT quadrangles

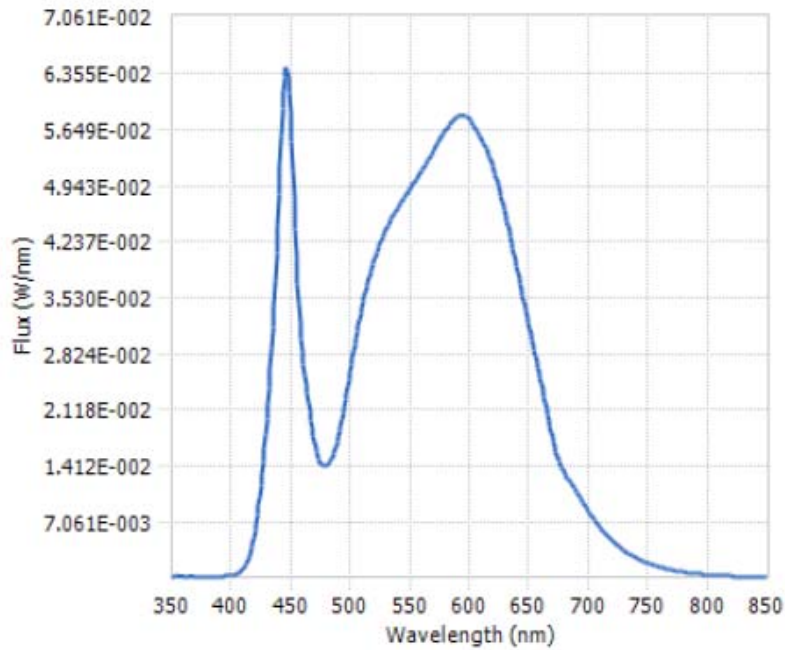




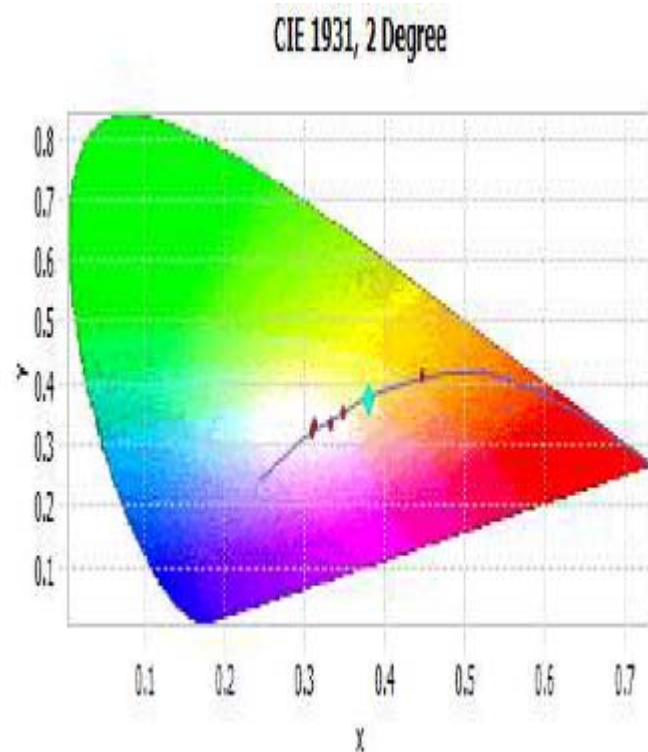
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Spectral power distribution



Chromaticity diagram





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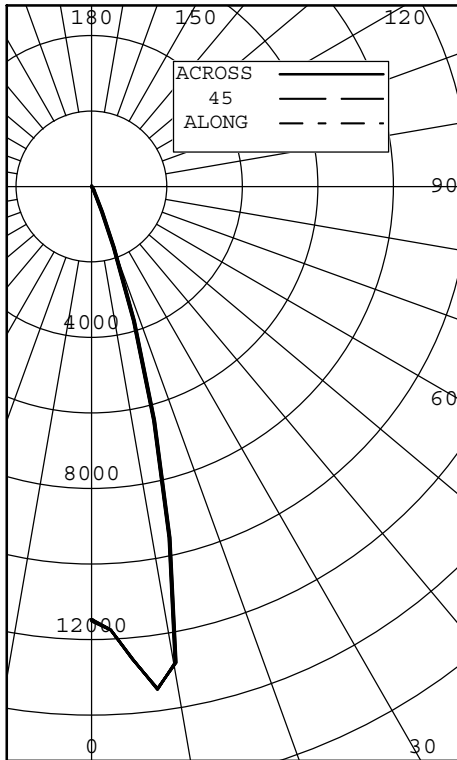
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Photo of Sample(s)



POLELED B.V,CAT# BASIC
 BASIC
 LED,CAT# LED. LUMINAIRE OUTPUT = 3254 LMS
 OPERATING AT 24 V DC

INTENSITY (CANDLEPOWER) SUMMARY



ANGLE	MEAN CP	LUMENS
0	11491	
5	12569	1243
10	12804	
15	6420	1713
20	1721	
25	299	221
30	128	
35	76	48
40	40	
45	28	22
50	18	
55	6	7
60	1	
65	0	0
70	0	
75	0	0
80	0	
85	0	0
90	0	

ZONAL LUMENS AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	3177	97.65
0-40	3225	99.13
0-60	3254	99.99
0-90	3254	100.00
40-90	28	0.87
60-90	0	0.01
90-180	0	0.00
0-180	3254	100.00

EFFICACY (LUMENS PER WATT): 85.9

*** THIS IS AN ABSOLUTE TEST ***

LUMINOUS DIAMETER: 10.230 INS

LUMINANCE SUMMARY - CD./SQ.M.

ANGLE	MEAN CD/SQ M
45	742
55	190
65	2
75	0
85	0

CERTIFIED BY:

DATE:
 FEB 25, 2014

PREPARED FOR:

POLELED
 B.V

TESTED IN ACCORDANCE WITH IES PROCEDURES.

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OPERATING AT 24 V DC

INTENSITY (CANDLEPOWER) DATA
IN 2.5 DEGREE STEPS

ANGLE	INTENSITY (CANDLEPOWER)	LUMENS
0.0	11491	
2.5	11761	
5.0	12569	1243
7.5	13428	
10.0	12804	
12.5	9528	
15.0	6420	1713
17.5	3741	
20.0	1721	
22.5	723	
25.0	299	221
27.5	168	
30.0	128	
32.5	108	
35.0	76	48
37.5	48	
40.0	40	
42.5	34	
45.0	28	22
47.5	23	
50.0	18	
52.5	12	
55.0	6	7
57.5	2	
60.0	1	
62.5	1	
65.0	0	0
67.5	0	
70.0	0	
72.5	0	
75.0	0	0
77.5	0	
80.0	0	
82.5	0	
85.0	0	0
87.5	0	
90.0	0	

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AVERAGE LUMINANCE DATA

CD./SQ.M (FOOTLAMBERTS)

ANGLE	LUMINANCE
0	216685 (63242)
30	2785 (812)
40	982 (286)
45	742 (216)
50	527 (153)
55	190 (55)
60	46 (13)
65	2 (0)
70	0 (0)
75	0 (0)
80	0 (0)
85	0 (0)

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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	1.221	.221	.221	.22	1.191	.191	.191	.19	1.161	.161	.161	.16	1.111	.111	.11		1.061	.061	.06		1.021	.021	.02		1.00
1	1.181	.161	.151	.13	1.161	.141	.131	.11	1.141	.121	.111	.09	1.081	.071	.06		1.041	.041	.03		1.011	.011	.00		0.98
2	1.151	.121	.091	.07	1.131	.101	.081	.06	1.111	.081	.061	.05	1.051	.041	.02		1.031	.011	.00		1.000	.990	.98		0.97
3	1.121	.081	.051	.03	1.111	.071	.041	.02	1.091	.061	.031	.02	1.041	.021	.00		1.011	.000	.98		1.000	.980	.97		0.96
4	1.101	.051	.021	.00	1.081	.041	.020	.99	1.071	.041	.010	.98	1.020	.990	.98		1.000	.980	.97		0.980	.970	.96		0.94
5	1.081	.030	.990	.97	1.061	.020	.990	.96	1.051	.010	.980	.96	1.000	.970	.95		0.980	.960	.95		0.970	.950	.94		0.93
6	1.061	.010	.970	.95	1.051	.000	.970	.95	1.040	.990	.960	.94	0.980	.960	.94		0.970	.950	.93		0.960	.940	.93		0.92
7	1.030	.980	.950	.93	1.030	.980	.950	.93	1.020	.980	.950	.92	0.960	.940	.92		0.950	.930	.92		0.950	.930	.91		0.90
8	1.020	.970	.930	.92	1.010	.960	.930	.91	1.000	.950	.930	.91	0.950	.920	.90		0.940	.920	.90		0.930	.910	.90		0.89
9	1.000	.950	.920	.90	0.990	.950	.920	.90	0.990	.940	.920	.90	0.940	.910	.89		0.930	.910	.89		0.920	.900	.89		0.88
10	0.990	.930	.900	.88	0.980	.930	.900	.88	0.970	.930	.900	.88	0.920	.890	.88		0.910	.890	.88		0.910	.890	.87		0.87

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 37.9

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.

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CONE OF LIGHT

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	11491.0	1149.1	0.8	5745.5	0.5
2	2872.8	287.3	1.5	1436.4	1.1
3	1276.8	127.7	2.3	638.4	1.6
4	718.2	71.8	3.0	359.1	2.1
5	459.6	46.0	3.8	229.8	2.7
6	319.2	31.9	4.6	159.6	3.2
7	234.5	23.5	5.3	117.3	3.8
8	179.5	18.0	6.1	89.8	4.3

10% CONE ANGLE: 41.6 DEGREES
50% CONE ANGLE: 30.1 DEGREES