



FOR THE SCOPE OF
ACCREDITATION UNDER NVLAP
LAB CODE 200849-0

TEST REPORT

Job No. 150801436SHA

Date: August 20, 2015

REPORT NO. 150801436SHA-002

TEST OF ONE LED LAMP
MODEL NO. 90935

RENDERED TO
Premium Quality Lighting, Inc.
2285 Ward Avenue / Simi Valley, CA 93065

TEST: Electrical and Photometric as required to the IESNA LM-79 test standard.

LABORATORY NOTE: The laboratory that conducted the testing detailed in this report has been Qualified, Verified, and Recognized for LM-79 Testing for ENERGY STAR for Luminaires by NVLAP program.

AUTHORIZATION: The testing performed was authorized by signed quote number QSH150819011.

STANDARDS USED: The following American National Standards or Illuminating Engineering Society of North America Test Guides were used in part or totally to test each specimen:
NEMA ANSLG C78.377: 2008 Specifications of the Chromaticity of Solid State Lighting Products
IESNA LM-79: 2008 Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products

DESCRIPTION OF SAMPLE: The client submitted ten samples of model 90935. The sample was received by Intertek on Mar 05, 2015, in undamaged condition, and three sample was tested as received. The sample designations was 0150305-01-018 to 0150305-01-027.

DATES OF TESTS: Mar 05, 2015 through Mar 10, 2015

ISSUED BY: Intertek Testing Services Shanghai

TEST LOCATION: 7 floor, No.51, 1089 Qinzhou Road (North), Shanghai, China 200233

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SUMMARY

Model Number :	90935
Description :	LED lamp

Test Condition: 12V 60Hz for 90935

Criteria	Result
Total Lumen Output	616.1
Total Power	6.52
Luminaire Efficacy	94.42
Power Factor	0.8585
Correlated Color Temperature (CCT)	3151
Color Rendering Index (CRI)	84.1
Chromaticity Coordinate (x)	0.4274
Chromaticity Coordinate (y)	0.4021
Chromaticity Coordinate (u')	0.2453
Chromaticity Coordinate (v')	0.5192

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EQUIPMENT LIST

Equipment Used	Model Number	Control Number
Fluke Temperature Meter	52	EC2357
Everfine- DC Power Supply	WY12010	EC4753-7
Everfine- AC power source for Integrating Sphere System	VPS1010 PWM	EC4760-12
Everfine - AC power source for Goniophotometer System	VPS1060 PWM	EC4753-8
Two meter integrating sphere unit	Everfine – 2M	EC4760
Everfine - Digital Power Meter	PF2010A	EC4760-10
YOKOGAWA - Digital Power Meter	WT210	EC4553
Everfine – Goniophotometer	Go-R5000	EC4753

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TEST METHOD

Seasoning in Sample Orientation – LED Products

No seasoning was performed in accordance with IESNA LM-79

Light Distribution and Output Measurements

Light Distribution and total light output (luminous flux) were measured using a Go-R5000 Type-C Rotating Mirror Goniophotometer. Temperature 25°C and relative humidity of 60% was measured at a position in the testing laboratory.

The lamp rotates only around the fixed vertical axle in the prescribed burning position. The lamp and mirror permit the measurement of luminous intensity at the direction of any horizontal or vertical angle without tilting the lamp. The lamp was allowed to stabilize before measurements were made.

Chromaticity Measurements

Chromaticity was measured using a 2 meters integrating sphere spectral lamp measurement system. Temperature was measured at a position inside the sphere shielded from direct light. Relative humidity of 65% was measured at a position in the testing laboratory.

Spectral radiant flux measurements were made using spectroradiometer attached to the detector port of the integrating sphere. Each lamp was allowed to stabilize before measurements were made. The calibration of the integrating sphere spectroradiometer system is by the reference/standard lamps which are traceable to National Institute of Metrology P.R. CHINA. Lamp efficacy (lumens per watt) for each lamp model was then computed based on the luminous flux result. Electrical measurements including voltage, power and power factor were measured using YOKOGAWA - Digital Power Meter., model WT210.

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RESULTS OF TESTS

Test Condition: 12V 60Hz for 90935

Photometric Measurements at 25°C

Intertek Sample No.	Base Orientation	Correlated Color Temperature (K)	CRI	CIE 31' Chromaticity Coordinate (x)	CIE 31' Chromaticity Coordinate (y)	CIE 76' Chromaticity Coordinate (u')	CIE 76' Chromaticity Coordinate (v')
90935							
0150305-01-018	Up	3151	84.1	0.4274	0.4021	0.2453	0.5192

Photometric and Electrical Measurements at 25°C

Intertek Sample No.	Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (Watts)	Input Power Factor	Absolute Luminous Flux (Lumens)	Lumen Efficacy (Lumens Per Watt)
90935							
0150305-01-018	Up	12.0	0.6335	6.52	0.8585	616.1	94.42

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	Luminaire (%)
90935		
0-30	441.6	71.7%
0-40	510.3	82.8%
0-60	582.7	94.6%
0-135	616.0	100%
0-180	616.0	100%

Beam Angle

Total Beam Angle(°)
33.9

Intensity Distribution

Central Intensity (cd)
1271

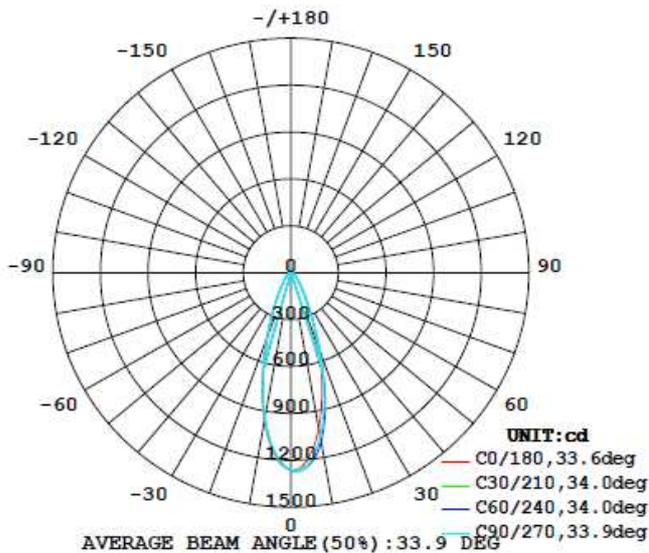
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RESULTS OF TESTS (cont'd)

Intensity (Candlepower) Summary at 25°C – Candelas

V \ H(°)	0	10	20	30	40	50	60	70	80	90
0	1266	1266	1265	1263	1262	1264	1264	1262	1261	1263
5	1156	1156	1158	1160	1163	1171	1178	1186	1192	1199
10	939.8	941.2	941.6	943.3	949.2	959.4	971.3	982.9	996.5	1011
15	677.7	681.2	683.4	685.4	691.4	702.2	714.5	727.2	743.8	759.8
20	436.4	441.7	445.8	450.1	456.5	465.2	475.5	485.8	496.6	504.1
25	260.6	262.8	265.8	270.8	274.6	280.7	287.8	293.2	298.6	301.4
30	156.2	156.9	158.7	161.3	162.6	165.6	168.7	172.5	177.1	176.6
35	99.2	99.8	100.3	101.3	102.6	103.9	105.5	107.7	110.1	110.7
40	69.0	69.2	69.5	70.0	70.8	71.5	72.6	74.0	75.6	76.5
45	51.3	51.6	51.8	51.9	52.4	52.9	53.8	54.9	56.0	56.5
50	39.6	39.7	39.8	39.9	40.2	40.6	41.2	41.9	42.7	43.2
55	30.8	31.0	31.0	31.1	31.2	31.6	32.1	32.6	33.2	33.5
60	24.0	24.1	24.2	24.2	24.4	24.6	24.9	25.3	25.8	26.0
65	18.5	18.6	18.7	18.8	18.8	19.0	19.1	19.4	19.8	20.0
70	13.6	13.7	13.8	13.9	14.0	14.1	14.3	14.5	14.7	14.8
75	9.3	9.4	9.5	9.6	9.7	9.8	9.9	10.0	10.2	10.3
80	5.7	5.7	5.8	5.9	5.9	6.1	6.1	6.2	6.3	6.4
85	2.7	2.7	2.8	2.8	2.9	3.0	3.0	3.1	3.2	3.2
90	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7



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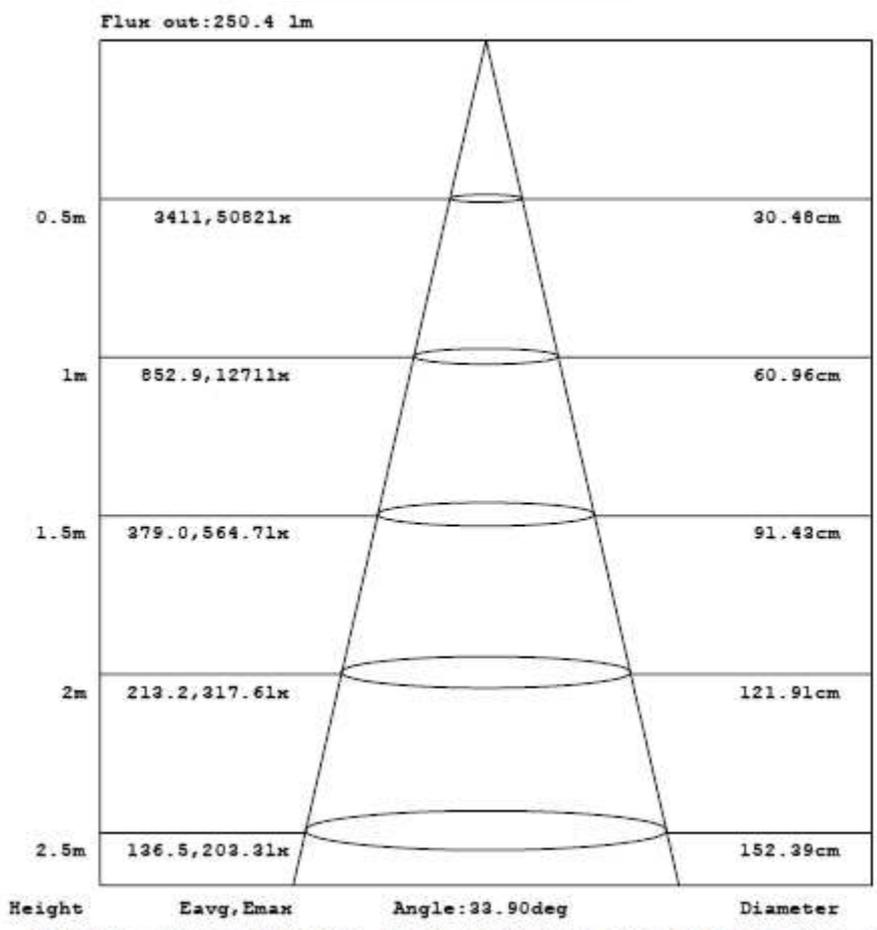


RESULTS OF TESTS (cont'd)

Illumination Plots

Model No.: 90935
Mount Height: 2.5 m

Illuminance - Cone of Light



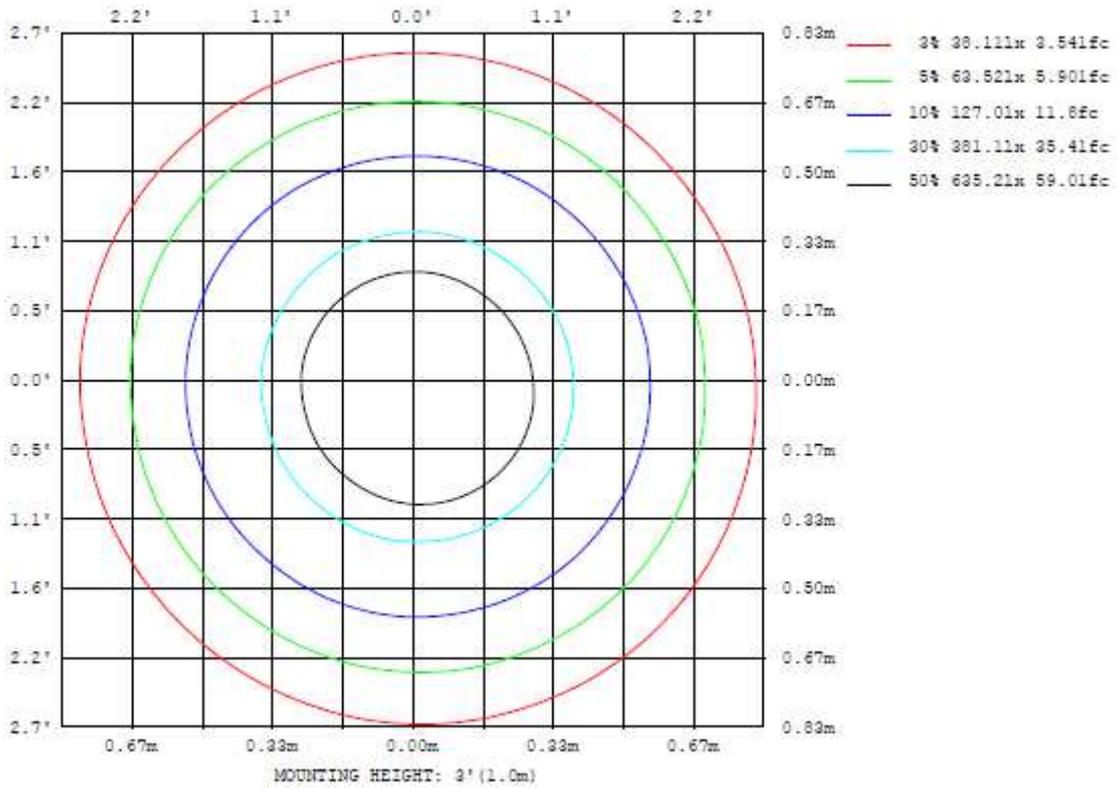
Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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RESULTS OF TESTS (cont'd)

Model No.: 90935
Mount Height: 10
m Isoillumination



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RESULTS OF TESTS (cont'd)

Product Picture (not to scale)



90935

In Charge Of Tests:

Jordan Rao
Project Engineer

Report Reviewed By:

Jimmy Wang
Reviewer

Attachment: None

***** End of Report *****