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## Photometric Test Report

Relevant Standards  
IES LM-79-2008, ANSI C82.77-2002, CIE 13.3-1995  
CIE 15-2004, ANSI C78.377-2015, IES TM-30-2015

Prepared For  
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Catalog Number  
**HLP-LED-e72-WHP-B**  
Order Number  
11717110  
Test Number  
11717110.03A  
Revised:  
2017-05-04  
Test Date

2017-04-21 - 2017-04-26

Prepared By

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Approved By

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The results contained in this report pertain only to the tested sample.  
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Laboratory results may not be representative of field performance  
Ballast factors have not been applied

Testing was performed in a 2-meter integrating sphere using the  $4\pi$  geometry method.

Absorption correction was employed for Sphere measurement

Tested in 30 planes left side, 30 planes right side, left and right averaged  
Vertical test increments are 2.5 degrees

Test distance exceeds five times the greatest luminous opening of luminaire



**Luminaire Description:** White metal shade/reflector, clear plastic lens, and metal base  
**Lamp:** One (1) white LED  
**Mounting:** Ground recessed  
**Ballast/Driver:** Unmarked power supply

**Luminaire**



**Luminaire Characteristics**

Luminous Diameter: 4.00 in.

**Summary of Results**

**Integrating Sphere**

Luminous Flux: 104 Lumens  
Efficacy: 30.7 lm/w  
CCT: 3951 K  
CRI (Ra): 81.2

**Distribution**

Roadway Classification: Type V, Very Short  
Cutoff Classification: Full Cutoff  
BUG Rating: B0 U0 G0

**Electrical Data at 120 VAC**

Test Temperature: 24.9 °C  
Voltage: 120.2 VAC  
Current: 0.05080 A  
Power: 3.389 W  
Power Factor: 0.554  
Frequency: 60 Hz  
Current THD: 150 %



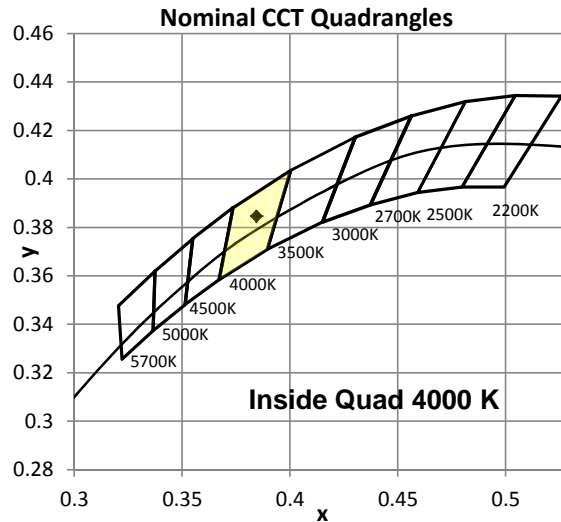
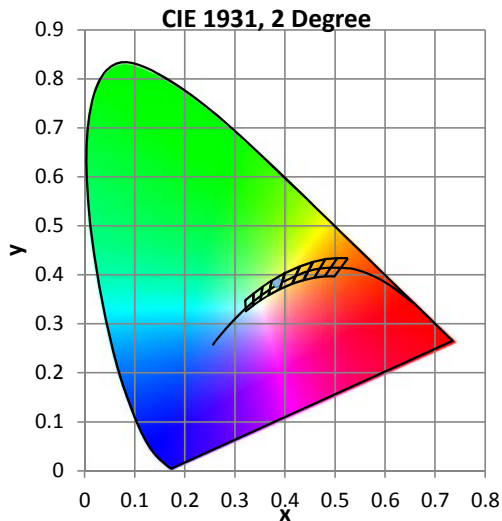
## Color Quality - Integrating Sphere

### Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.9 °C	120.2 VAC	0.05080 A	3.389 W	0.554	60 Hz	150 %

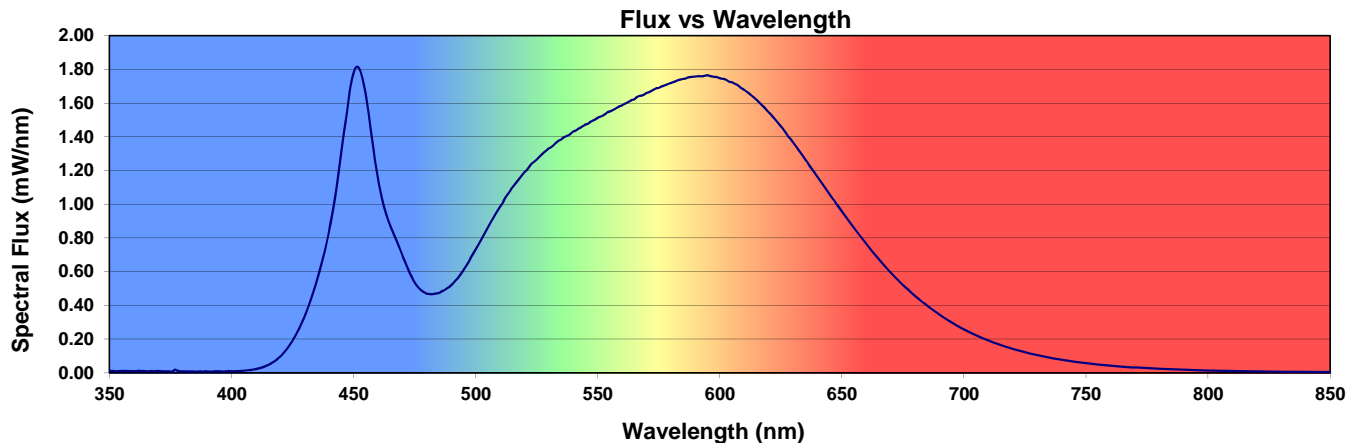
### Summary of Results

Total Output:	104 Lumens	Chromaticity (x):	0.3844
Efficacy:	30.7 lm/w	Chromaticity (y):	0.3846
CCT:	3951 K	Chromaticity (u'):	0.2246
CRI (Ra):	81.2	Chromaticity (v'):	0.5056
CRI (R9):	7.3	TM-30 R <sub>f</sub> :	80.9
Peak Wavelength:	451.6 nm	TM-30 R <sub>g</sub> :	95.4
Dominant Wavelength:	578 nm	Duv:	0.0024
S/P Ratio:	1.627		



### Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
81.2	79.3	86.5	91.9	80.4	78.6	80.9	87.0	65.0	7.3	67.3	77.8	56.1	80.8	95.3





## Distribution - Goniophotometer

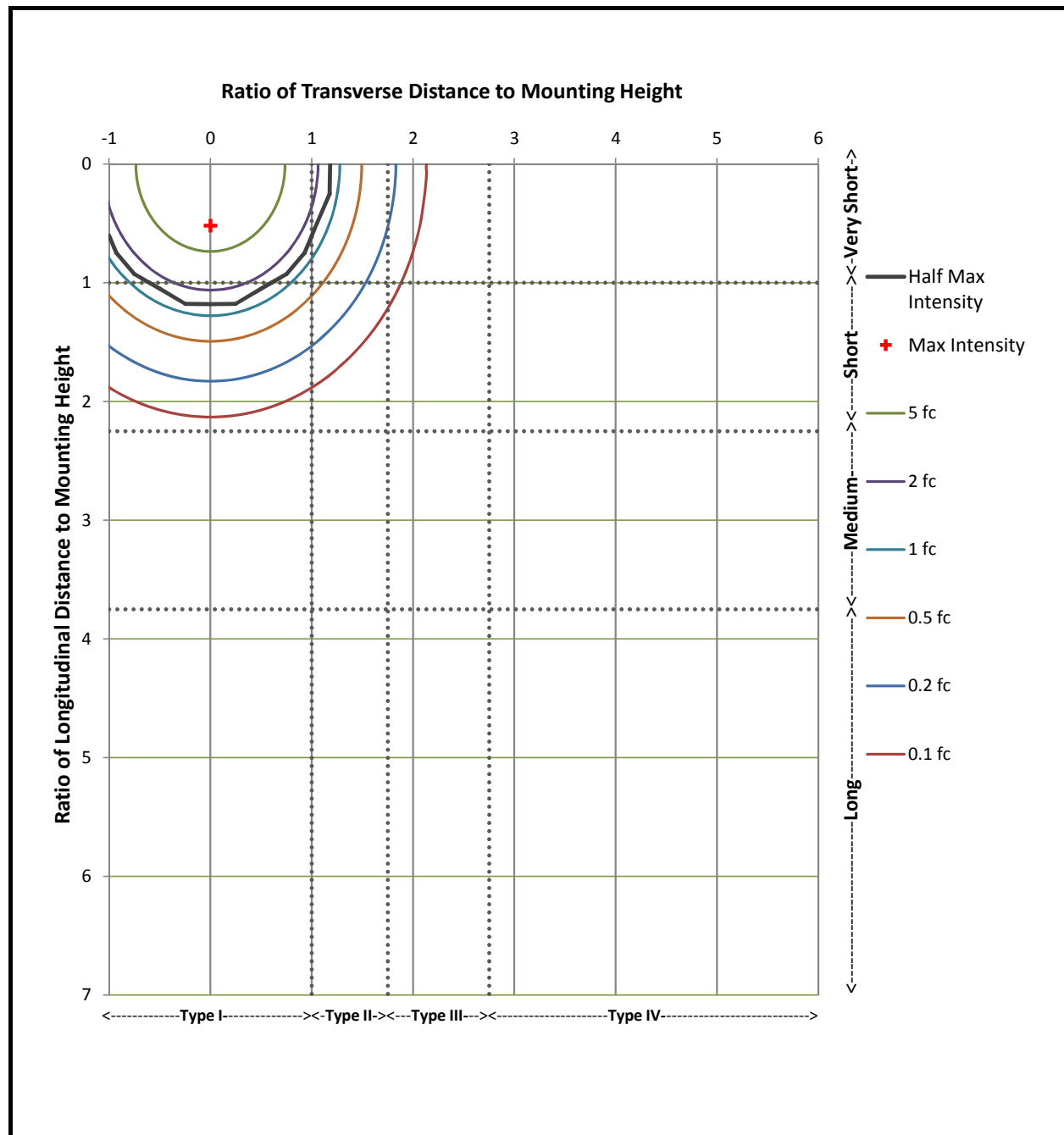
### Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.7 °C	120.1 VAC	0.05050 A	3.396 W	0.560	60 Hz	148 %

### Summary of Results

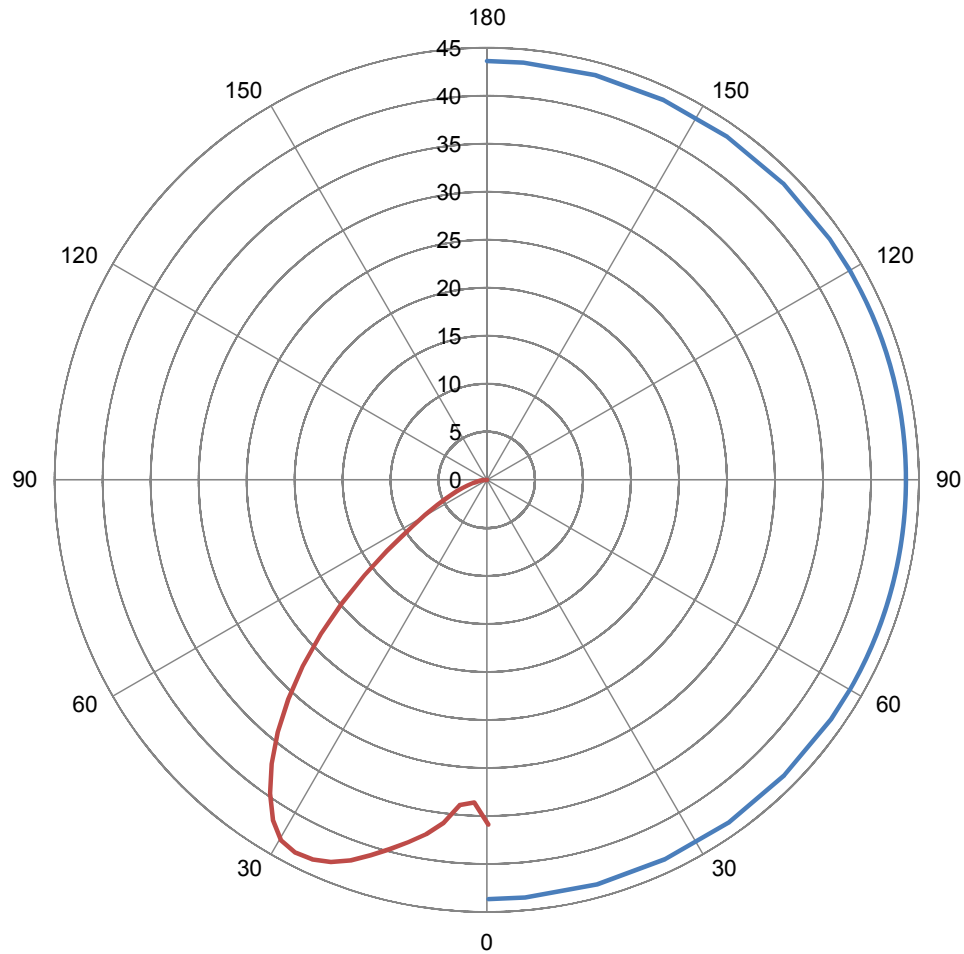
IES Roadway Classification:	Type V, Very Short	Total Lumen Output:	100 Lumens
Cutoff Classification	Full Cutoff	Luminaire Efficacy:	29.5 lm/w
BUG Rating:	B0 U0 G0	Maximum Candela:	44 Candela

### ISO FootCandle Plot at 2 Feet





### Maximum Plane and Cone Plots of Candela



Vertical Plane Through

0 ° Lateral

Lateral Cone Through

27.5 ° Vertical

Maximum Intensity (Candlepower):

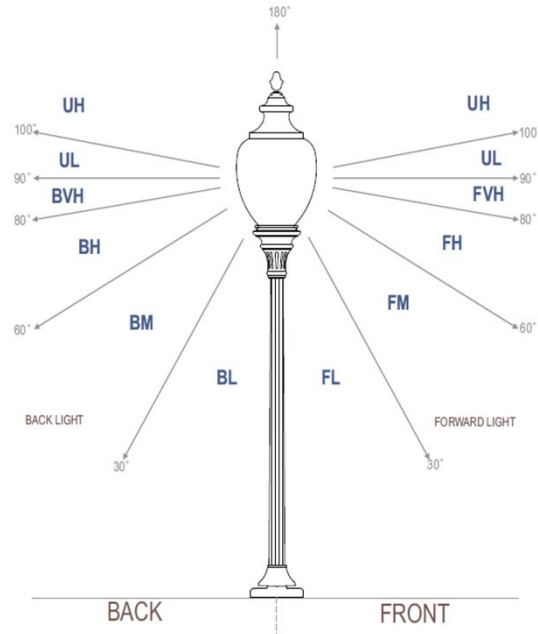
44 Candela

### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	0.9	0.9%	60-65	3.1	3.1%	120-125	0.0	0.0%
5-10	2.6	2.6%	65-70	2.1	2.1%	125-130	0.0	0.0%
10-15	4.6	4.6%	70-75	1.4	1.4%	130-135	0.0	0.0%
15-20	6.8	6.7%	75-80	0.9	0.9%	135-140	0.0	0.0%
20-25	9.0	9.0%	80-85	0.5	0.5%	140-145	0.0	0.0%
25-30	11.0	11.0%	85-90	0.2	0.2%	145-150	0.0	0.0%
30-35	12.2	12.2%	90-95	0.0	0.0%	150-155	0.0	0.0%
35-40	12.3	12.3%	95-100	0.0	0.0%	155-160	0.0	0.0%
40-45	11.3	11.3%	100-105	0.0	0.0%	160-165	0.0	0.0%
45-50	9.5	9.5%	105-110	0.0	0.0%	165-170	0.0	0.0%
50-55	7.0	7.0%	110-115	0.0	0.0%	170-175	0.0	0.0%
55-60	4.7	4.7%	115-120	0.0	0.0%	175-180	0.0	0.0%



**IES "BUG" Rating**  
(Back Light, Uplight, Glare)  
Per IES TM-15-11



**Luminaire Classification System (LCS)**

LCS	Zone	Lumens	Luminaire %
FL	(0-30)	17.4	17.4%
FM	(30-60)	28.6	28.5%
FH	(60-80)	3.7	3.7%
FVH	(80-90)	0.4	0.4%
BL	(0-30)	17.4	17.4%
BM	(30-60)	28.6	28.5%
BH	(60-80)	3.7	3.7%
BVH	(80-90)	0.4	0.4%
UL	(90-100)	0.0	0.0%
UH	(100-180)	0.0	0.0%
Total		100.1	100.0%
<b>BUG Rating</b>	<b>B0 U0 G0</b>		