



UL Verification Services Inc.
7036 Snowdrift Road
Allentown, PA 18106
610-774-1300



Photometric Test Report

Relevant Standards
IES LM-79-2008, ANSI C82.77-10-2014, CIE 13.3-1995
CIE 15-2004, ANSI C78.377-2017, IES TM-30-2018

Prepared For
H E Williams Inc
831 W FairView Ave
PO Box 837
Carthage, MO 64836-0837
United States

Catalog Number
MX2D-4-L8/835-D
Order Number
13052732
Test Number
13052732.16

Test Date

2019-10-10 - 2019-10-15

Prepared By

Josh Mitchell, Technician

Approved By

Alexa Lambert, Project Handler

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 4π geometry method.
Absorption correction was employed for Sphere measurement



Luminaire Description: Formed White aluminum housing,frosted lens enclosure
Lamp: 144 White LEDs
Mounting: Pendant
Ballast/Driver: One Philips XI040C110V054BST1 Driver

Luminaire



Luminaire Characteristics

Luminous Length: 48.00 in.
Luminous Width: 2.000 in.
Luminous Height: 0.50 in.

Summary of Results

Integrating Sphere

Luminous Flux: 3152 Lumens
Efficacy: 117.57 lm/w
CCT: 3441 K
CRI (Ra): 83.1

Distribution

Total Luminaire Output: 3010 Lumens
Luminaire Efficacy: 112.3 lm/w
Maximum Candela: 1049 Candela

Electrical Data at 120 VAC

Test Temperature: 25.4 °C
Voltage: 120.1 VAC
Current: 0.2246 A
Power: 26.81 W
Power Factor: 0.994
Frequency: 60 Hz
Current THD: 9.31 %



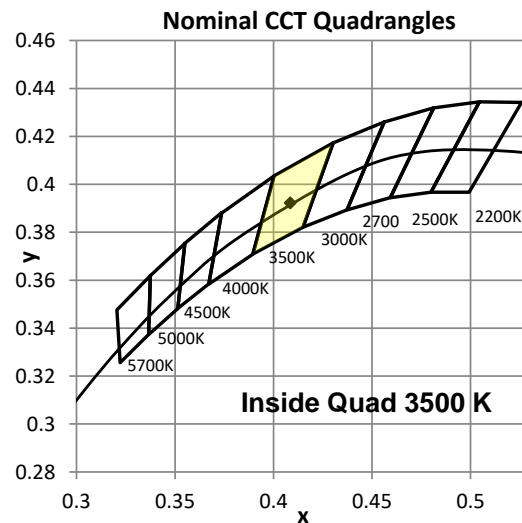
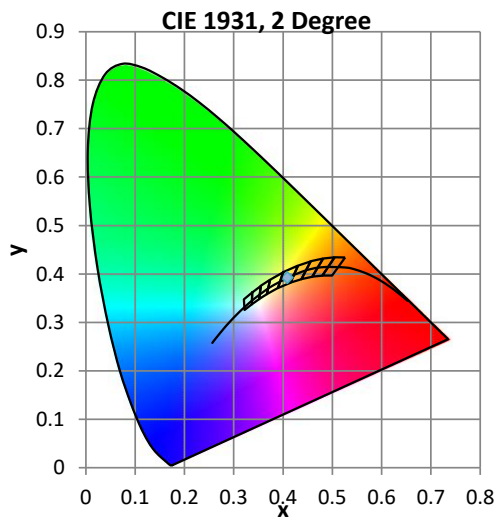
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.4 °C	120.1 VAC	0.2246 A	26.81 W	0.994	60 Hz	9.31 %

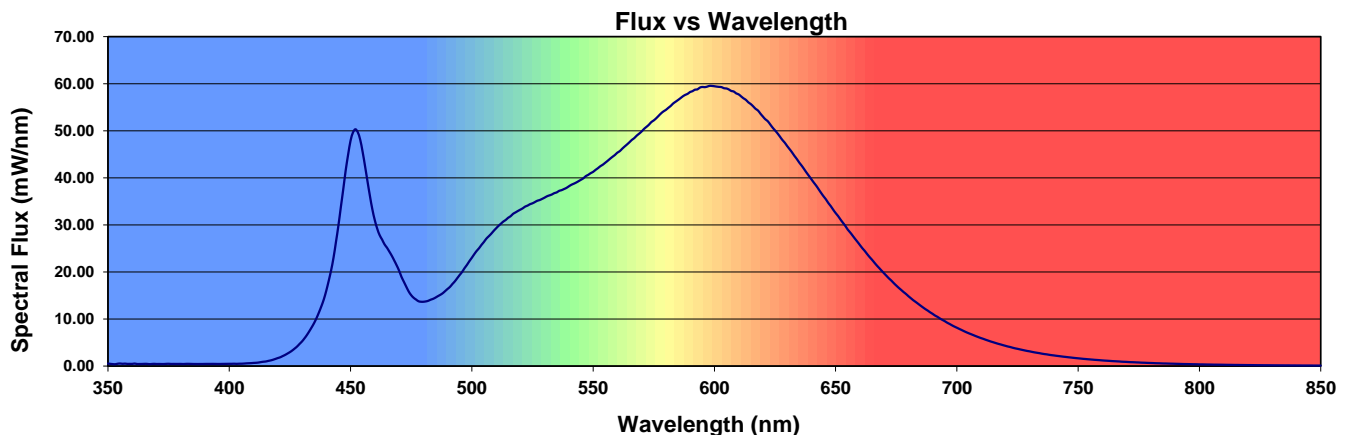
Summary of Results

Total Output:	3152 Lumens	Chromaticity (x):	0.4085
Efficacy:	117.6 lm/w	Chromaticity (y):	0.3923
CCT:	3441 K	Chromaticity (u'):	0.2372
CRI (Ra):	83.1	Chromaticity (v'):	0.5124
CRI (R9):	7.9	TM-30 Rf:	84.4
Peak Wavelength:	599 nm	TM-30 Rg:	95.2
Dominant Wavelength:	581 nm	Duv:	0.0003
S/P Ratio:	1.51		



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
83.1	81.5	90.6	96.3	81.3	81.6	87.5	84.2	61.6	7.9	77.9	80.6	65.6	83.8	98.5	74.3





Distribution - Goniophotometer

Distribution Test Conditions

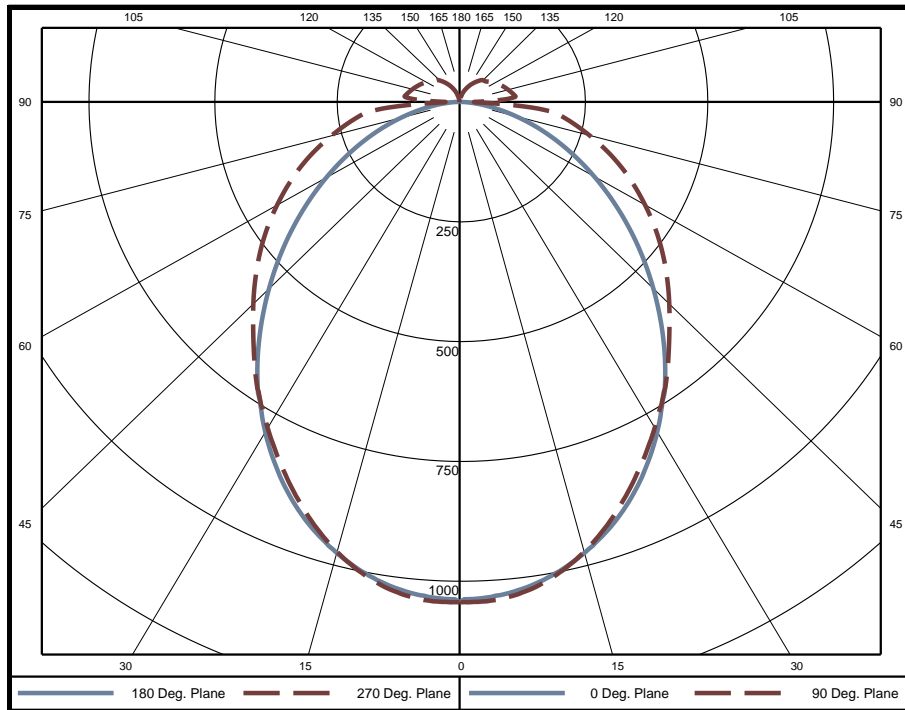
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	120.1 VAC	0.2246 A	26.82 W	0.994	60 Hz	9.33 %

Summary of Results

Spacing Criteria
 0-180: 1.14
 90-270: 1.13

Total Lumen Output: 3010 Lumens
Luminaire Efficacy: 112.3 lm/w
Maximum Candela: 1049 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	24.9	0.8%	60-65	171.4	5.7%	120-125	23.1	0.8%
5-10	73.6	2.4%	65-70	149.1	5.0%	125-130	19.9	0.7%
10-15	118.3	3.9%	70-75	124.6	4.1%	130-135	17.0	0.6%
15-20	156.8	5.2%	75-80	99.7	3.3%	135-140	13.8	0.5%
20-25	187.4	6.2%	80-85	75.4	2.5%	140-145	10.6	0.4%
25-30	209.5	7.0%	85-90	32.5	1.1%	145-150	7.6	0.3%
30-35	223.0	7.4%	90-95	25.3	0.8%	150-155	5.2	0.2%
35-40	228.7	7.6%	95-100	38.0	1.3%	155-160	3.2	0.1%
40-45	226.6	7.5%	100-105	35.7	1.2%	160-165	1.7	0.1%
45-50	219.4	7.3%	105-110	32.9	1.1%	165-170	0.7	0.0%
50-55	207.5	6.9%	110-115	29.7	1.0%	170-175	0.2	0.0%
55-60	191.2	6.4%	115-120	26.3	0.9%	175-180	0.0	0.0%

Zone	Lumens	% of Luminaire
0-40	1222	40.6%
0-60	2067	68.7%
0-90	2720	90.4%
90-180	291	9.7%



Candela Tabulation

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
	0	1045	1045	1045	1045	1045	1045	1045	1045	1045	1045	1045	1045	1045	1045	1045
	5	1032	1043	1038	1041	1040	1041	1038	1043	1032	1043	1038	1041	1040	1041	1038
	10	1010	1022	1017	1016	1015	1016	1017	1022	1010	1022	1017	1016	1015	1016	1017
	15	973	987	978	974	971	974	978	987	973	987	978	974	971	974	978
	20	925	939	925	917	913	917	925	939	925	939	925	917	913	917	925
	25	864	878	862	853	848	853	862	878	864	878	862	853	848	853	862
	30	792	808	793	786	783	786	793	808	792	808	793	786	783	786	793
	35	717	733	722	720	719	720	722	733	717	733	722	720	719	720	722
	40	633	653	649	651	652	651	649	653	633	653	649	651	652	651	649
	45	548	572	578	588	593	588	578	572	548	572	578	588	593	588	578
	50	465	495	512	531	538	531	512	495	465	495	512	531	538	531	512
	55	386	422	450	475	484	475	450	422	386	422	450	475	484	475	450
	60	311	352	390	419	428	419	390	352	311	352	390	419	428	419	390
	65	242	287	332	365	375	365	332	287	242	287	332	365	375	365	332
	70	178	226	277	311	322	311	277	226	178	226	277	311	322	311	277
	75	119	169	224	259	270	259	224	169	119	169	224	259	270	259	224
	80	68	118	174	210	223	210	174	118	68	118	174	210	223	210	174
	85	28	74	127	150	159	150	127	74	28	74	127	150	159	150	127
	90	0	10	20	26	30	26	20	10	0	10	20	26	30	26	20
	95	0	41	79	102	109	102	79	41	0	41	79	102	109	102	79
	100	0	43	77	100	108	100	77	43	0	43	77	100	108	100	77
	105	0	41	73	94	102	94	73	41	0	41	73	94	102	94	73
	110	0	38	68	89	95	89	68	38	0	38	68	89	95	89	68
	115	0	35	63	83	89	83	63	35	0	35	63	83	89	83	63
	120	0	31	59	76	82	76	59	31	0	31	59	76	82	76	59
	125	0	27	57	70	75	70	57	27	0	27	57	70	75	70	57
	130	0	23	51	66	69	66	51	23	0	23	51	66	69	66	51
	135	0	20	45	62	66	62	45	20	0	20	45	62	66	62	45
	140	1	16	39	53	59	53	39	16	1	16	39	53	59	53	39
	145	1	12	32	45	50	45	32	12	1	12	32	45	50	45	32
	150	1	9	25	37	41	37	25	9	1	9	25	37	41	37	25
	155	1	7	18	29	32	29	18	7	1	7	18	29	32	29	18
	160	1	5	12	21	24	21	12	5	1	5	12	21	24	21	12
	165	1	3	8	11	15	11	8	3	1	3	8	11	15	11	8
	170	1	2	4	6	8	6	4	2	1	2	4	6	8	6	4
	175	1	1	1	2	2	2	1	1	1	1	2	2	2	1	1
	180	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

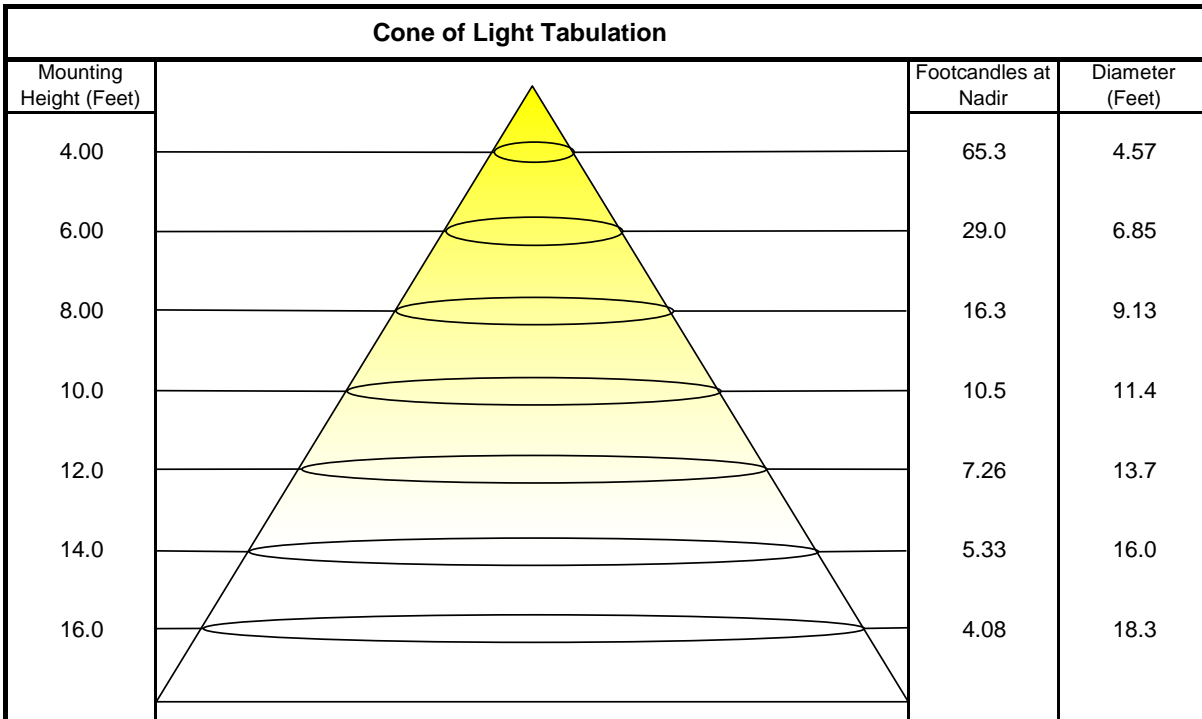
Vertical Angle (Degrees)	0	45	90
	0	16880	16880
	45	12380	10840
	55	10700	10030
	65	9043	9322
	75	7161	8711
	85	4710	7586



Coefficients of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance 20%																		
Ceiling Cavity Reflectance	80				70				50			30			10			0
Wall Reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)	** Values are expressed as percent of total lumen output delivered to the task surface **																	
0	117	117	117	117	113	113	113	113	106	106	106	99	99	99	93	93	93	90
1	106	101	96	92	102	97	93	90	91	88	85	86	83	81	81	79	77	74
2	96	88	81	75	92	85	78	73	80	74	70	75	71	67	71	67	64	61
3	88	77	69	62	84	75	67	61	70	64	59	66	61	56	62	58	54	52
4	80	68	59	53	77	66	58	52	63	56	50	59	53	48	56	51	47	44
5	74	61	52	45	71	59	51	45	56	49	43	53	47	42	50	45	41	38
6	68	55	46	40	66	54	45	39	51	44	38	48	42	37	46	40	36	34
7	63	50	41	35	61	49	41	35	46	39	34	44	38	33	42	36	32	30
8	59	46	37	31	57	45	37	31	42	35	30	40	34	30	39	33	29	27
9	55	42	34	28	53	41	33	28	39	32	27	37	31	27	36	30	26	24
10	52	39	31	26	50	38	30	25	36	30	25	35	29	24	33	28	24	22

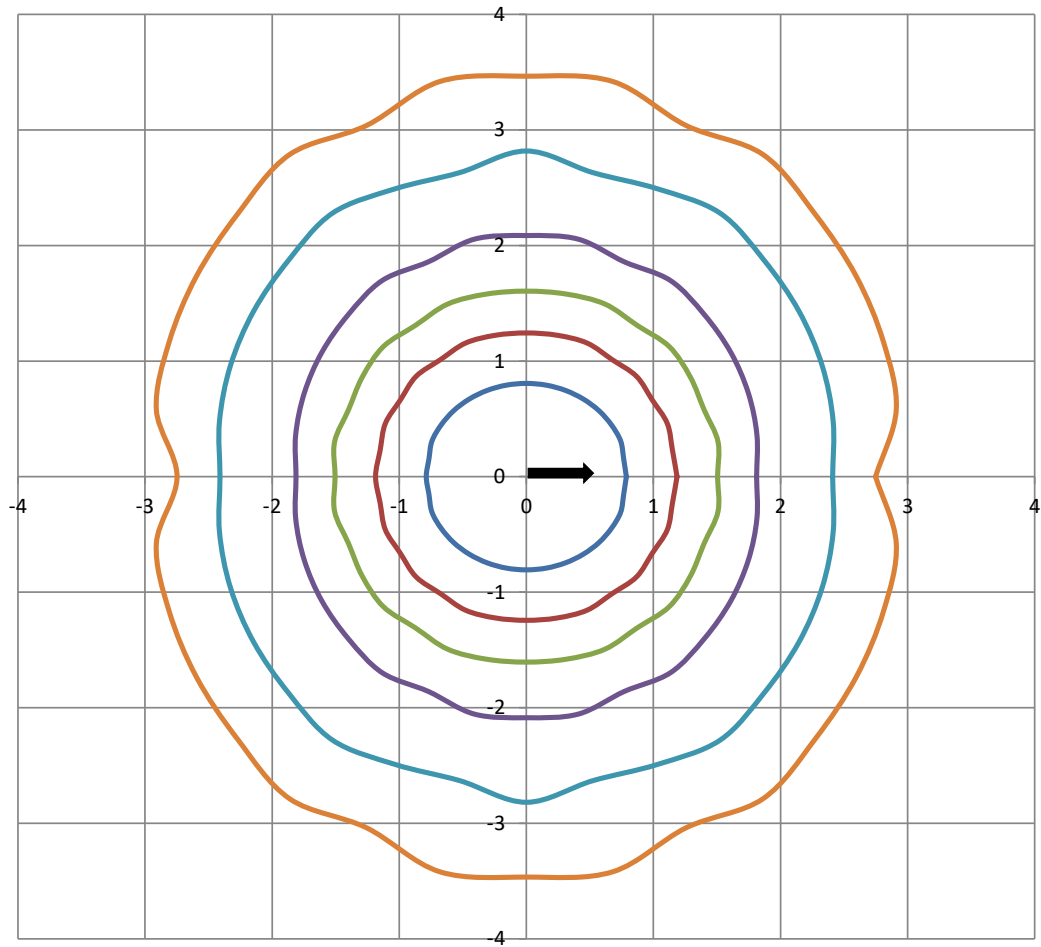
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	1045 Candela
Central Cone Intensity:	1043 Candela
Beam Flux:	1637.9 Lumens
Beam Angle (0-180):	93.0 Degrees
Beam Angle (90-270):	102.9 Degrees
Field Angle (0-180):	152.7 Degrees
Field Angle (90-270):	173.3 Degrees





ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

— 5 fc — 2 fc — 1 fc — 0.5 fc — 0.2 fc — 0.1 fc