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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

H E Williams Inc

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United States

Catalog Number

MDSG-24-L200/840-SYM/ASY

Order Number

12186363

Test Number

12186363.04

Test Date

2018-02-22

Prepared By

Dane Hernandez-Adams, 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 3-meter integrating sphere using the 4π geometry method.
Absorption correction was employed for Sphere measurement



Luminaire Description: White formed steel housing, frosted plastic patterned lens enclosure
Lamp: 336 white LEDs
Mounting: Recessed
Ballast/Driver: Philips XI095C275V054BSS1

Luminaire



Luminaire Characteristics

Luminous Length: 20.00 in.
Luminous Width: 44.00 in.

Summary of Results

Integrating Sphere

Luminous Flux: 21680 Lumens
Efficacy: 126.4 lm/w
CCT: 4188 K
CRI (Ra): 83.8

Distribution

Total Luminaire Output: 21140 Lumens
Luminaire Efficacy: 123.1 lm/w
Maximum Candela: 9270 Candela

Electrical Data at 120 VAC

Test Temperature: 25.0 °C
Voltage: 120.0 VAC
Current: 1.434 A
Power: 171.5 W
Power Factor: 0.997
Frequency: 60 Hz
Current THD: 5.95 %



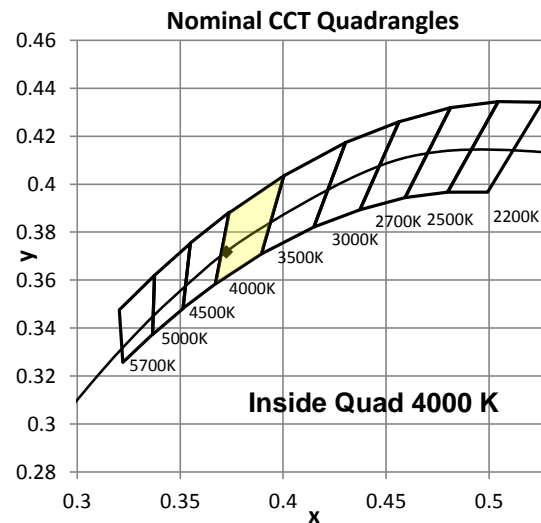
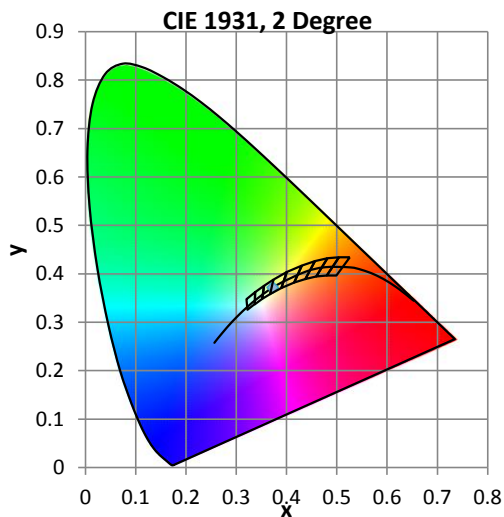
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	120.0 VAC	1.434 A	171.5 W	0.997	60 Hz	5.95 %

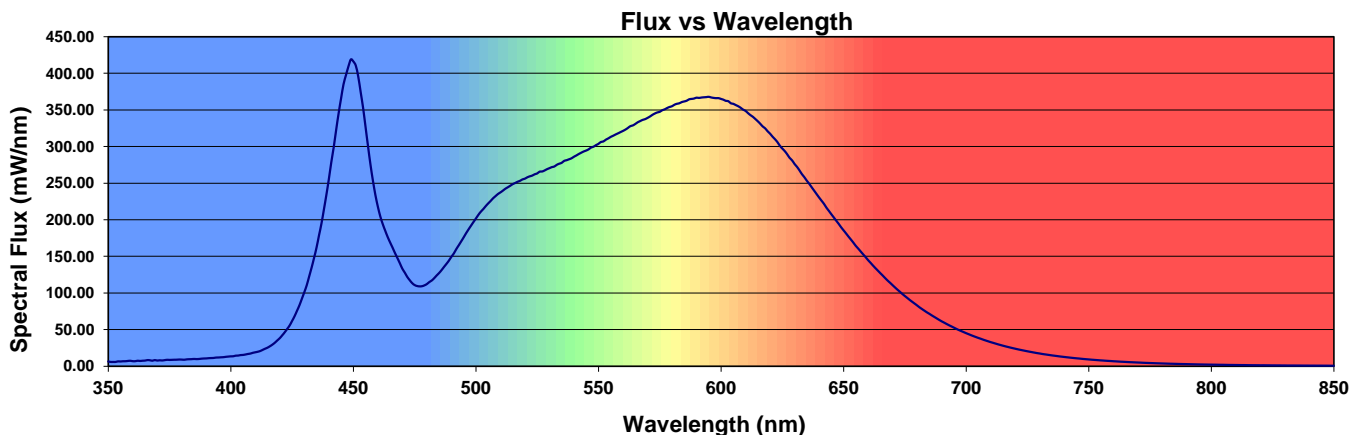
Summary of Results

Total Output:	21680 Lumens	Chromaticity (x):	0.3725
Efficacy:	126.4 lm/w	Chromaticity (y):	0.3718
CCT:	4188 K	Chromaticity (u'):	0.2218
CRI (Ra):	83.8	Chromaticity (v'):	0.4982
CRI (R9):	11.0	TM-30 Rf:	83.3
Peak Wavelength:	449.5 nm	TM-30 Rg:	96.8
Dominant Wavelength:	578.3 nm	Duv:	0.0003
S/P Ratio:	1.745		



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
83.8	82.1	88.9	94.3	83.8	82.7	85.1	86.6	66.4	11.0	74.1	83.4	67.1	83.7	96.9	76.0





Distribution - Goniophotometer

Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.0 °C	120.0 VAC	1.436 A	171.7 W	0.997	60 Hz	6.00 %

Summary of Results

Spacing Criteria

0-180: 1.45
90-270: 1.20

Total Lumen Output:

21140 Lumens

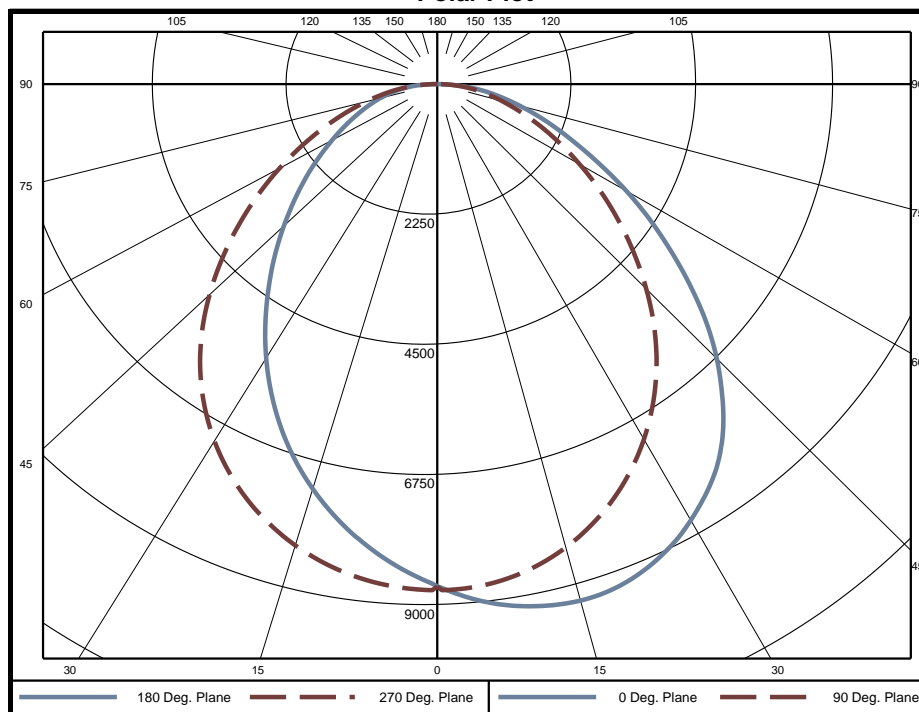
Luminaire Efficacy:

123.1 lm/w

Maximum Candela:

9270 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	207	1.0%	60-65	1176	5.6%	120-125	0	0.0%
5-10	613	2.9%	65-70	931	4.4%	125-130	0	0.0%
10-15	994	4.7%	70-75	704	3.3%	130-135	0	0.0%
15-20	1332	6.3%	75-80	497	2.4%	135-140	0	0.0%
20-25	1613	7.6%	80-85	304	1.4%	140-145	0	0.0%
25-30	1823	8.6%	85-90	108	0.5%	145-150	0	0.0%
30-35	1956	9.3%	90-95	0	0.0%	150-155	0	0.0%
35-40	2005	9.5%	95-100	0	0.0%	155-160	0	0.0%
40-45	1963	9.3%	100-105	0	0.0%	160-165	0	0.0%
45-50	1840	8.7%	105-110	0	0.0%	165-170	0	0.0%
50-55	1653	7.8%	110-115	0	0.0%	170-175	0	0.0%
55-60	1424	6.7%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	10543	49.9%
0-60	17423	82.4%
0-90	21143	100.0%
90-180	0	0.0%



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	8686	8686	8686	8686	8686	8686	8686	8686	8686	8686	8686	8686	8686	8686	8686
	5	8977	8937	8861	8788	8701	8522	8370	8297	8288	8297	8370	8522	8701	8788	8861
	10	9169	9107	8959	8772	8551	8244	7988	7853	7807	7853	7988	8244	8551	8772	8959
	15	9264	9171	8947	8650	8300	7873	7517	7308	7237	7308	7517	7873	8300	8650	8947
	20	9231	9111	8809	8416	7953	7414	6959	6682	6598	6682	6959	7414	7953	8416	8809
	25	9047	8911	8550	8076	7515	6877	6334	5996	5892	5996	6334	6877	7515	8076	8550
	30	8734	8579	8181	7641	6989	6266	5656	5280	5159	5280	5656	6266	6989	7641	8181
	35	8309	8097	7679	7092	6377	5607	4961	4569	4432	4569	4961	5607	6377	7092	7679
	40	7689	7449	7021	6414	5689	4910	4270	3893	3760	3893	4270	4910	5689	6414	7021
	45	6860	6617	6217	5642	4939	4195	3606	3267	3144	3267	3606	4195	4939	5642	6217
	50	5893	5670	5327	4806	4179	3500	2990	2708	2609	2708	2990	3500	4179	4806	5327
	55	4849	4676	4400	3972	3438	2859	2438	2220	2135	2220	2438	2859	3438	3972	4400
	60	3856	3698	3496	3166	2745	2280	1953	1795	1733	1795	1953	2280	2745	3166	3496
	65	2908	2811	2660	2425	2124	1776	1535	1436	1392	1436	1535	1776	2124	2425	2660
	70	2145	2050	1937	1783	1579	1348	1181	1131	1102	1131	1181	1348	1579	1783	1937
	75	1508	1425	1341	1239	1117	979	881	859	844	859	881	979	1117	1239	1341
	80	974	911	850	791	731	653	608	604	596	604	608	653	731	791	850
	85	481	448	405	388	367	344	325	349	343	349	325	344	367	388	405
	90	34	28	21	15	12	32	49	73	64	73	49	32	12	15	21
	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

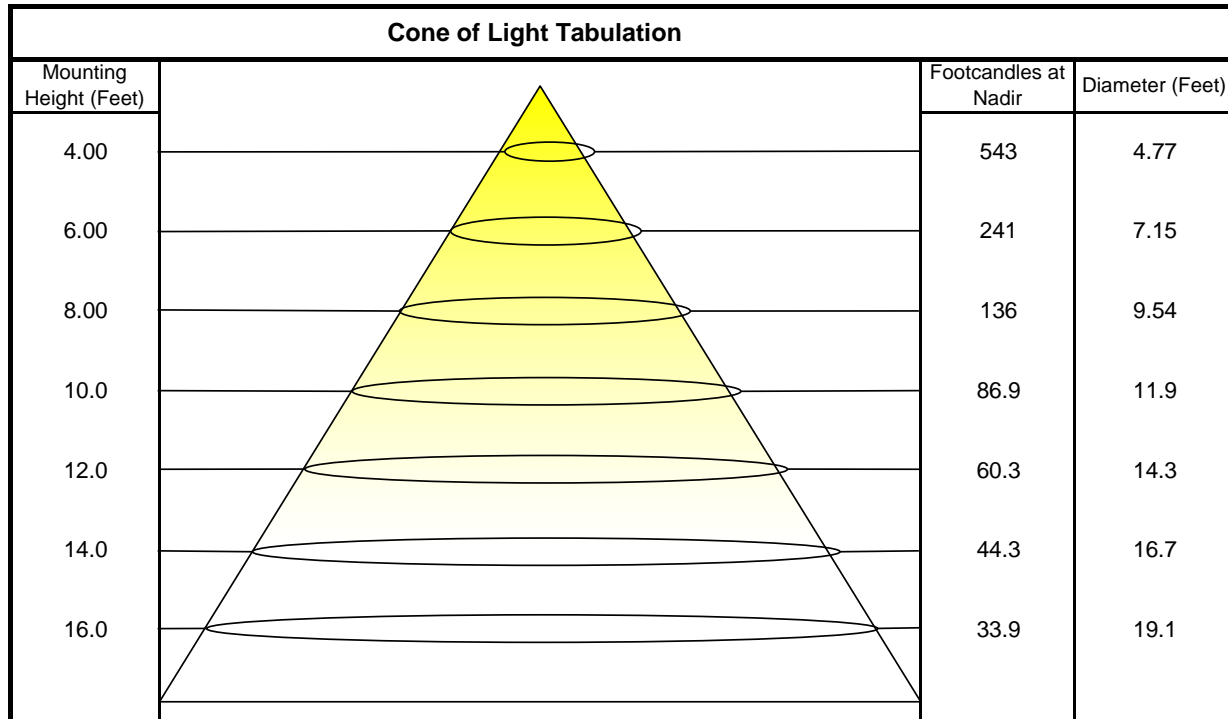
Vertical Angle (Degrees)	0	45	90
	0	15300	15300
	45	17090	15490
	55	14890	13510
	65	12120	11090
	75	10260	9129
	85	9718	8177



Utilization of Lumens - 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 Lumens delivered to the task surface **																	
0	25170	25170	25170	25170	24584	24584	24584	24584	23492	23492	23492	22492	22492	22492	21574	21574	21574	21143
1	23101	22135	21269	20490	22530	21657	20869	20156	20761	20113	19520	19938	19411	18923	19180	18757	18362	17925
2	21123	19457	18077	16917	20575	19060	17792	16716	18315	17250	16329	17629	16740	15958	16994	16260	15605	15158
3	19350	17213	15559	14242	18835	16882	15349	14114	16259	14946	13866	15682	14565	13626	15147	14203	13394	12945
4	17787	15348	13561	12197	17311	15070	13402	12112	14546	13095	11947	14059	12803	11786	13606	12525	11630	11184
5	16413	13787	11953	10598	15976	13553	11829	10540	13110	11591	10426	12698	11363	10315	12313	11144	10206	9769
6	15198	12469	10638	9323	14801	12271	10540	9282	11895	10352	9201	11543	10170	9121	11214	9996	9043	8619
7	14124	11348	9549	8288	13764	11179	9471	8258	10857	9319	8198	10556	9172	8140	10273	9030	8082	7673
8	13173	10388	8637	7434	12847	10243	8574	7412	9967	8449	7367	9707	8329	7323	9463	8213	7279	6886
9	12327	9560	7866	6721	12032	9435	7813	6704	9196	7711	6670	8971	7611	6636	8758	7515	6602	6225
10	11572	8841	7207	6119	11305	8733	7163	6106	8525	7077	6079	8329	6994	6052	8143	6914	6026	5664

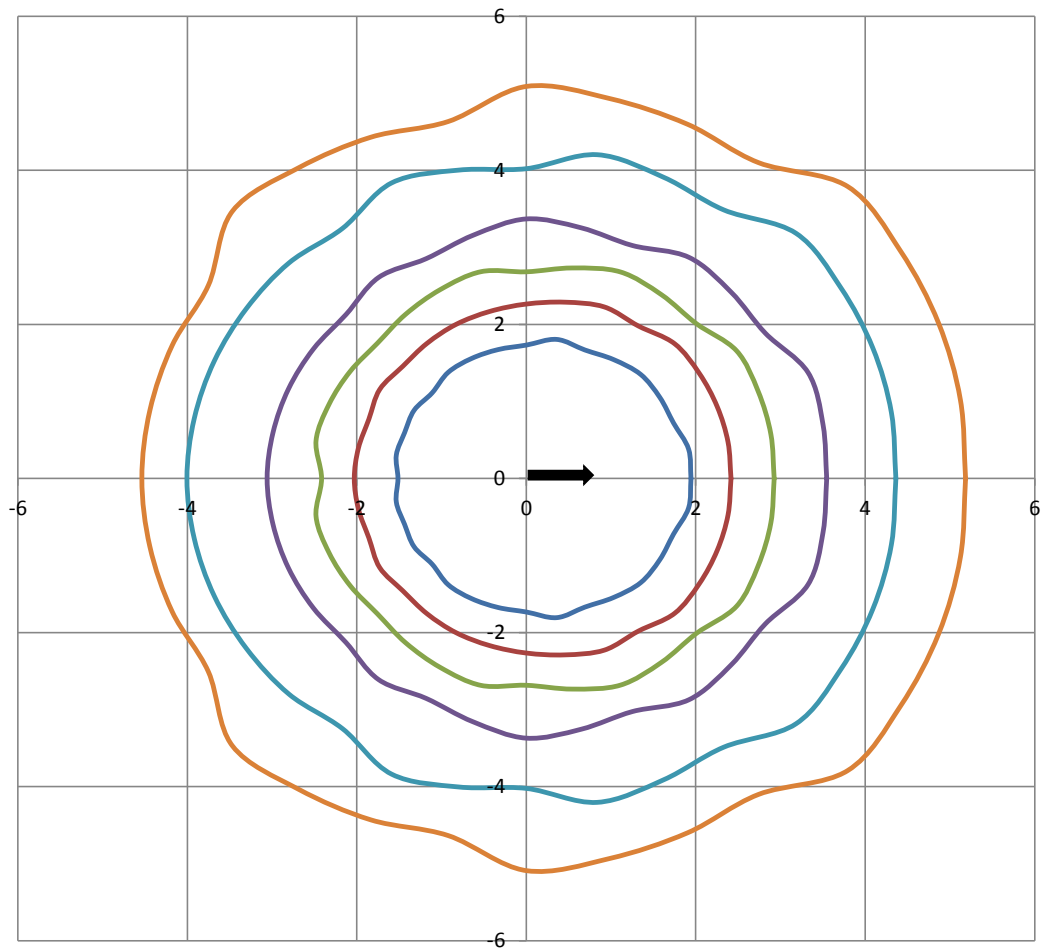
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	8686 Candela
Central Cone Intensity:	8669 Candela
Beam Flux:	14023.0 Lumens
Beam Angle (0-180):	93.2 Degrees
Beam Angle (90-270):	97.8 Degrees
Field Angle (0-180):	155.6 Degrees
Field Angle (90-270):	156.2 Degrees





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