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Photometric Test Report

Relevant Standards
IES LM-79-2008
ANSI C82.77-2002

Prepared For
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Catalog Number
AK-M14 Akoya

Order Number
11148757
Test Number
1205360

Test Date

2016-02-03 - 2016-02-04

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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: Steel patterned outer covering, white frosted globe
Lamp: 21 white LEDs
Mounting: Pendant
Ballast/Driver: Internal driver

Luminaire



Luminaire Characteristics

Luminous Diameter: 14.50 in.
Luminous Height: 8.00 in.

Summary of Results

Integrating Sphere

Luminous Flux: 439 Lumens
Efficacy: 50.5 lm/w
CCT: 2686 K
CRI (Ra): 80.7

Distribution

Total Luminaire Output: 432.4 Lumens
Luminaire Efficacy: 49.7 lm/w
Maximum Candela: 77 Candela

Electrical Data at 120 VAC

Test Temperature: 25.0 °C
Voltage: 120.0 VAC
Current: 0.07464 A
Power: 8.696 W
Power Factor: 0.971
Frequency: 60 Hz
Current THD: 24.7 %

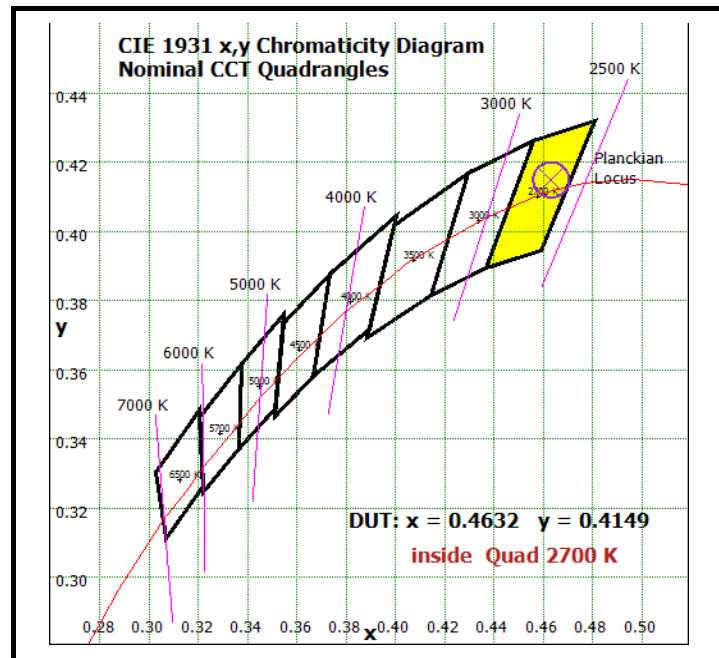


Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

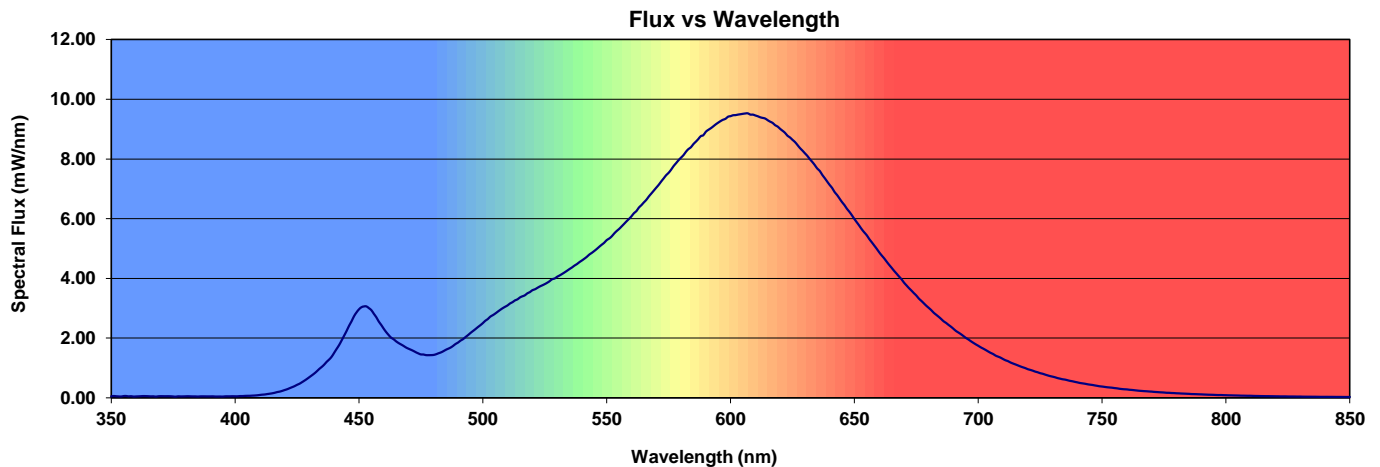
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	120.0 VAC	0.07464 A	8.696 W	0.971	60 Hz	24.7 %

Summary of Results	
Total Output:	439 Lumens
Efficacy:	50.5 lm/w
CCT:	2686 K
CRI (Ra):	80.7
CRI (R9):	3.0
Chromaticity (x):	0.4632
Chromaticity (y):	0.4149
Chromaticity (u):	0.2627
Chromaticity (v):	0.3530
Chromaticity (u'):	0.2627
Chromaticity (v'):	0.5295
Duv:	0.0009



Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
80.7	78.5	89.9	96.2	77.6	78.4	88.2	81.5	55.5	3.0	77.6	75.9	72.1	80.9	98.5





Distribution - Goniophotometer

Distribution Test Conditions

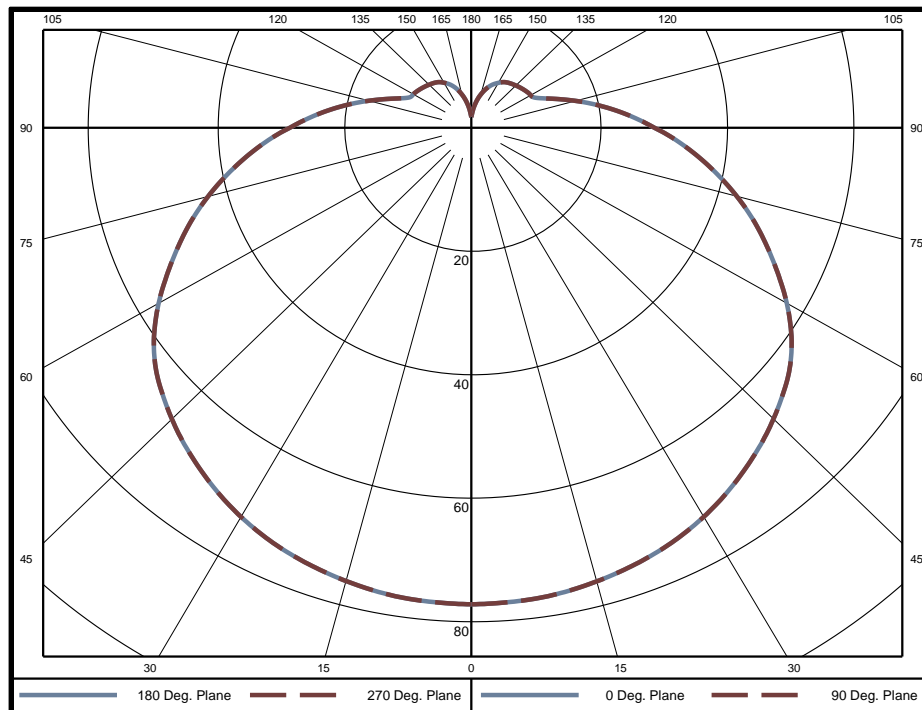
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.2 °C	120.0 VAC	0.07470 A	8.702 W	0.970	60 Hz	24.7 %

Summary of Results

Spacing Criteria
 0-180: 1.41
 90-270: 1.41

Total Lumen Output: 432.4 Lumens
Luminaire Efficacy: 49.7 lm/w
Maximum Candela: 77 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	1.84	0.4%	60-65	26.60	6.2%	120-125	4.88	1.1%
5-10	5.50	1.3%	65-70	25.36	5.9%	125-130	4.45	1.0%
10-15	9.06	2.1%	70-75	23.76	5.5%	130-135	4.01	0.9%
15-20	12.46	2.9%	75-80	21.75	5.0%	135-140	3.55	0.8%
20-25	15.67	3.6%	80-85	19.48	4.5%	140-145	3.09	0.7%
25-30	18.59	4.3%	85-90	17.03	3.9%	145-150	2.58	0.6%
30-35	21.17	4.9%	90-95	14.55	3.4%	150-155	2.04	0.5%
35-40	23.37	5.4%	95-100	12.22	2.8%	155-160	1.52	0.4%
40-45	25.16	5.8%	100-105	10.00	2.3%	160-165	1.01	0.2%
45-50	26.51	6.1%	105-110	7.98	1.8%	165-170	0.58	0.1%
50-55	27.34	6.3%	110-115	6.33	1.5%	170-175	0.26	0.1%
55-60	27.36	6.3%	115-120	5.30	1.2%	175-180	0.06	0.0%

Zone	Lumens	% of Luminaire
0-40	108	24.9%
0-60	214	49.5%
0-90	348	80.5%
90-180	84	19.5%



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	77.17	77.17	77.17	77.17	77.17	77.17	77.17	77.17	77.17	77.17	77.17	77.17	77.17	77.17	77.17
	5	77.03	77.03	77.03	77.03	77.03	77.03	77.03	77.03	77.03	77.03	77.03	77.03	77.03	77.03	77.03
	10	76.70	76.70	76.70	76.70	76.70	76.70	76.70	76.70	76.70	76.70	76.70	76.70	76.70	76.70	76.70
	15	76.03	76.03	76.03	76.03	76.03	76.03	76.03	76.03	76.03	76.03	76.03	76.03	76.03	76.03	76.03
	20	75.19	75.19	75.19	75.19	75.19	75.19	75.19	75.19	75.19	75.19	75.19	75.19	75.19	75.19	75.19
	25	74.16	74.16	74.16	74.16	74.16	74.16	74.16	74.16	74.16	74.16	74.16	74.16	74.16	74.16	74.16
	30	72.76	72.76	72.76	72.76	72.76	72.76	72.76	72.76	72.76	72.76	72.76	72.76	72.76	72.76	72.76
	35	71.02	71.02	71.02	71.02	71.02	71.02	71.02	71.02	71.02	71.02	71.02	71.02	71.02	71.02	71.02
	40	69.04	69.04	69.04	69.04	69.04	69.04	69.04	69.04	69.04	69.04	69.04	69.04	69.04	69.04	69.04
	45	66.83	66.83	66.83	66.83	66.83	66.83	66.83	66.83	66.83	66.83	66.83	66.83	66.83	66.83	66.83
	50	64.38	64.38	64.38	64.38	64.38	64.38	64.38	64.38	64.38	64.38	64.38	64.38	64.38	64.38	64.38
	55	61.22	61.22	61.22	61.22	61.22	61.22	61.22	61.22	61.22	61.22	61.22	61.22	61.22	61.22	61.22
	60	57.06	57.06	57.06	57.06	57.06	57.06	57.06	57.06	57.06	57.06	57.06	57.06	57.06	57.06	57.06
	65	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39	52.39
	70	47.81	47.81	47.81	47.81	47.81	47.81	47.81	47.81	47.81	47.81	47.81	47.81	47.81	47.81	47.81
	75	43.07	43.07	43.07	43.07	43.07	43.07	43.07	43.07	43.07	43.07	43.07	43.07	43.07	43.07	43.07
	80	38.22	38.22	38.22	38.22	38.22	38.22	38.22	38.22	38.22	38.22	38.22	38.22	38.22	38.22	38.22
	85	33.48	33.48	33.48	33.48	33.48	33.48	33.48	33.48	33.48	33.48	33.48	33.48	33.48	33.48	33.48
	90	28.68	28.68	28.68	28.68	28.68	28.68	28.68	28.68	28.68	28.68	28.68	28.68	28.68	28.68	28.68
	95	24.49	24.49	24.49	24.49	24.49	24.49	24.49	24.49	24.49	24.49	24.49	24.49	24.49	24.49	24.49
	100	20.52	20.52	20.52	20.52	20.52	20.52	20.52	20.52	20.52	20.52	20.52	20.52	20.52	20.52	20.52
	105	16.89	16.89	16.89	16.89	16.89	16.89	16.89	16.89	16.89	16.89	16.89	16.89	16.89	16.89	16.89
	110	13.74	13.74	13.74	13.74	13.74	13.74	13.74	13.74	13.74	13.74	13.74	13.74	13.74	13.74	13.74
	115	11.44	11.44	11.44	11.44	11.44	11.44	11.44	11.44	11.44	11.44	11.44	11.44	11.44	11.44	11.44
	120	10.67	10.67	10.67	10.67	10.67	10.67	10.67	10.67	10.67	10.67	10.67	10.67	10.67	10.67	10.67
	125	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40
	130	10.08	10.08	10.08	10.08	10.08	10.08	10.08	10.08	10.08	10.08	10.08	10.08	10.08	10.08	10.08
	135	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75
	140	9.42	9.42	9.42	9.42	9.42	9.42	9.42	9.42	9.42	9.42	9.42	9.42	9.42	9.42	9.42
	145	9.04	9.04	9.04	9.04	9.04	9.04	9.04	9.04	9.04	9.04	9.04	9.04	9.04	9.04	9.04
	150	8.41	8.41	8.41	8.41	8.41	8.41	8.41	8.41	8.41	8.41	8.41	8.41	8.41	8.41	8.41
	155	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68	7.68
	160	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70	6.70
	165	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51
	170	4.21	4.21	4.21	4.21	4.21	4.21	4.21	4.21	4.21	4.21	4.21	4.21	4.21	4.21	4.21
	175	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86	2.86
	180	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82	1.82

Average Luminance (cd/m²)
Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	45	90
	0	724	724
	45	700	700
	55	686	686
	65	640	640
	75	585	585
	85	516	516



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	495	495	495	495	473	473	473	473	434	434	434	397	397	397	364	364	364	348
1	435	408	383	361	414	389	367	347	355	337	321	323	309	296	294	283	273	257
2	389	346	311	281	369	330	298	271	301	275	252	274	252	233	248	231	216	201
3	351	299	258	226	332	285	248	219	260	229	204	236	211	190	214	194	176	162
4	318	261	219	187	301	249	211	181	227	195	169	207	180	158	188	165	147	134
5	291	231	189	157	275	221	182	153	202	169	143	184	156	134	167	144	125	113
6	267	206	165	135	253	197	159	131	181	148	123	165	137	115	151	127	108	97
7	247	185	145	117	234	178	140	114	163	131	107	150	122	101	137	113	94	84
8	229	168	129	103	217	161	125	100	148	117	95	136	109	89	125	101	83	74
9	213	153	116	91	203	147	113	89	136	105	84	125	98	79	115	92	75	66
10	199	141	105	82	190	135	102	80	125	96	75	116	90	71	107	84	67	59

Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	4.82	5.66
6.00	2.14	8.49
8.00	1.21	11.3
10.0	0.772	14.1
12.0	0.536	17.0
14.0	0.394	19.8
16.0	0.301	22.6

Cone of Light Plot

