



71356
LED Floodlight

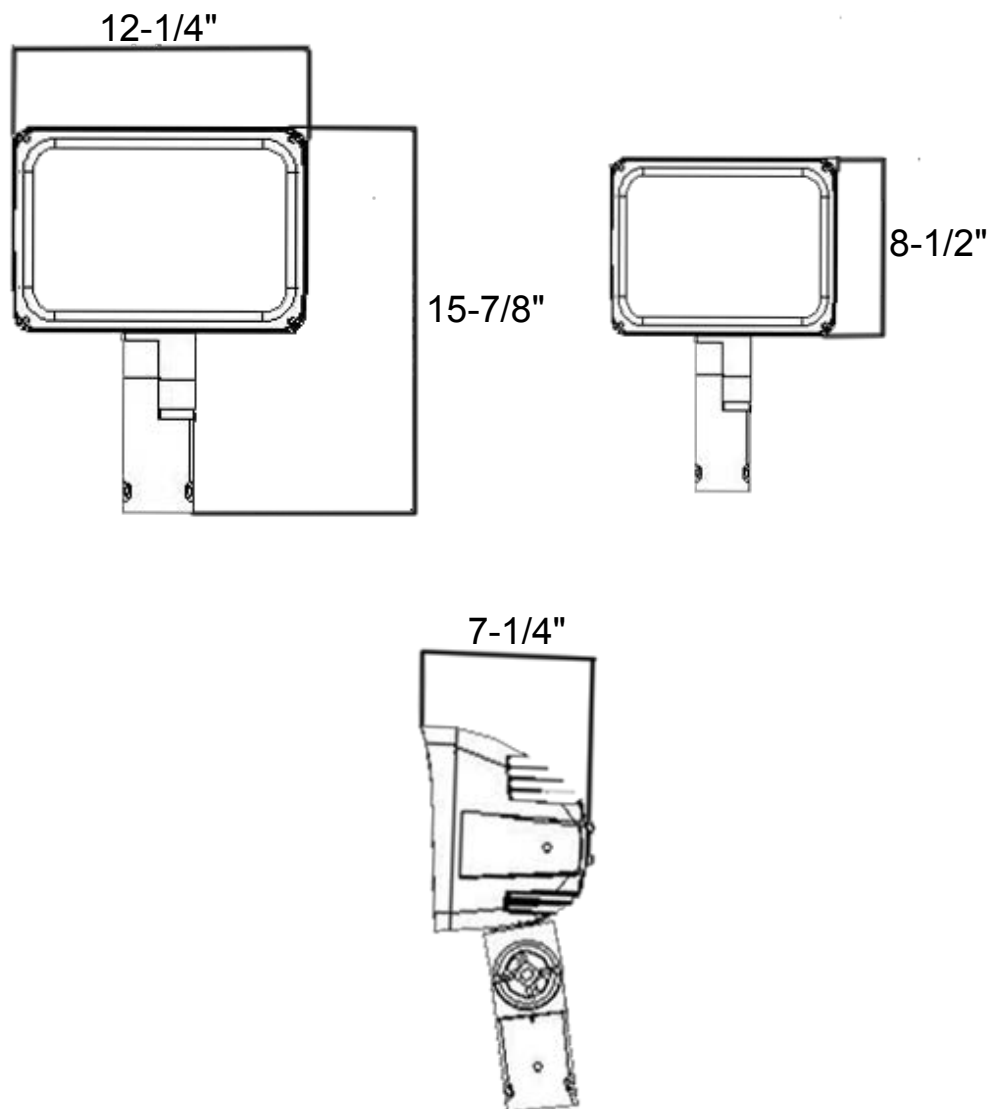


RoHS



Model :		71356
OVERALL LAMP PARAMETERS	Input Voltage	100-277AC 50/60HZ
	Input Current	1.2A MAX
	Input Power	93 W
	Power Factor	PF≥0.90
	Luminance	8396 LM
	Luminous Efficiency	89 LM/W
	CRI	76
	Beam Angle	120°
	Main Structure	Aluminium + Tempered Glass
LED DRIVER	Output Voltage	42VDC
	Output Current	2.28A
	Driver Efficiency	89%
LED	LED Manufacturer	cree
	LED Type	CXA2520
	LED Quantity	5 PCS
	LED Efficacy	110 Lm/Watt
	Color Temperature	WW/NW/CW (5290K)
Photocell	-	Sold Separately
LIFESPAN & ENVIRONMENT	Lifespan	50000 Hrs.
	Warranty	5 Years
	IP Rating/IP	IP65 Wet Locations
	Operating Temperature	-40F - +131F
	Storage Temperature/Humidity	-40F - +176F , 10—90% RH
SAFETY & EMC	Safety Norms	UL1598,UL8750, EN60598, EN81347-2-13, EN62031, EN62471
	Withstand Voltage	IP-FG: 2121VDC
	Grounding Resistance	≤0.5Ω,OK
	Electromagnetic Compatibility	EN55015, EN61000-2-3, EN61000-3-3, EN61547
OTHERS	Dimension	Pls refer to attached dimensional drawing
	Net Weight	16.94 Lbs
	Packing Size	inner box: \ master carton: L 17" X W 12.5" X H 9.33"
	Q'ty / Carton	1PCS
	Volume	1.15Cbm/carton

Dimension : **71356**





NVLAP LAB CODE 201011-0

Report No.: GZE140709-J

LM-79-08 Test Report

For

MORRIS Products Inc.
53 Carey Rd
Queensbury, NY 12804

Architectural Flood and Spot Luminaires

Model name(s): 71355, 71356

Representative (Tested) Model: 71355

Model Difference: All construction and rating are the same, except CCT

Test & Report By:

Sean Zhuo

Engineer: Sean Zhuo

Date: Aug.25,2014

Review By:

Tommy Liang

Manager: Tommy Liang

Note: This report does not imply product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

Laboratory: Standard-Tech Co. Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

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U.S. Department of Energy

Lighting Facts™ Uniform LM-79 Reporting Template

Laboratory Information:

Name of Test Laboratory	Standard-Tech Co. Ltd
Date of Test Report	Aug.25,2014
Test Report No.	GZE140709-J
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	MORRIS Products Inc.		
Brand Name	MORRIS		
Model Number	71355		
SKU (if available)	N/A		
Type of Luminaire (for integral lamps, list base type and lamp type)	Architectural Flood and Spot Luminaires		
Luminaire Aperture (for downlights)	--	in. mm mm s	
Luminaire Length	--		
Luminaires Width	--		
Number of Units (modular products)	N/A		

Integrating Sphere

Goniophotometer

Electrical Measurements:

Output

Output

Input Wattage	93.75	--	W
Input Current	0.7868	--	A
Input Voltage (ac)	120.0	--	V
Power Factor	0.9929	--	
Off-State Power	0	--	W

Photometric Characteristics

Total Initial Lumen Output	8396		lm
Initial Lumen Efficacy	89.56		lm/w
Correlated color temperature / CCT	5290	--	K
Color rendering index / CRI	76.4	--	
R9 Value	0	--	
Duv	-0.0013	--	
Luminous Intensity Distribution			
Center beam candlepower (if applicable)	-----	--	
Beam angle (if applicable)		--	
Zonal lumens in the 0°-60° zone		--	
Zonal lumens in the 60°-90° zone		--	
Zonal lumens in the 90°-120° zone		--	
Zonal lumens in the 120°-180° zone		--	

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Test Specifications:	
Date of Receipt	: Aug.21,2014
Date of Test	: Aug.22,2014
Test item	: Total Luminous Flux, Luminous Distribution Intensity, Luminous Efficacy, Correlated Color Temperature, Color Rendering Index, Chromaticity Coordinate, Electrical parameters
Reference Standard	IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources CIE 15-2004 Technical Report Colorimetry IESNA LM-16-93 Practical Guide to Colorimetry of Light Source IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems
Reference Work Instruction	QD25

Test Methods

1. Photometric and Electrical measurements – Light Distribution Method:

Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, measured at a point not more than 1 m from the sample and at the same height as the sample. The sample was operated at 120 Volts AC, 60Hz. It was stabilized before measurement was made. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals.

2. Photometric and Electrical Measurements – Integrating Sphere Method:

Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. The sample was operated at 120 Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at least 5 nm intervals over the range of 380 to 780 nm.

1. Product Information:

Brand Name	MORRIS
Model Number	71355
Luminaire Type	Architectural Flood and Spot Luminaires
Rated Voltage / Frequency	100 ~ 277 Vac, 50/60 Hz
Nominal Power	100W
Rated Initial Lamp Lumen	--
Declared CCT	3000K,3500K,4000K,4500K,5000K
LED Manufacturer	CREE
LED Model	CXA2520
Sample Receipt Date	Aug.21,2014
Sample Number	140709-27(3000K),28(5000K)

Photo



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2.1 Electrical, Photometric and Chromaticity Measurements (Refer to Work Instruction QD25)	IES LM-79 2008
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Test date	2014-08-22	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	71355		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
140709-27	119.9	60	0.7753	92.27	0.9925	7.72
	277.0	60	0.3603	92.46	0.9264	14.75

Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	83.3
R9	13
CCT (K)	3007
Chromaticity (x, y)	x=0.4376 y=0.4064
Chromaticity (u', v')	u'=0.2500 v'=0.5224
Duv	0.0008

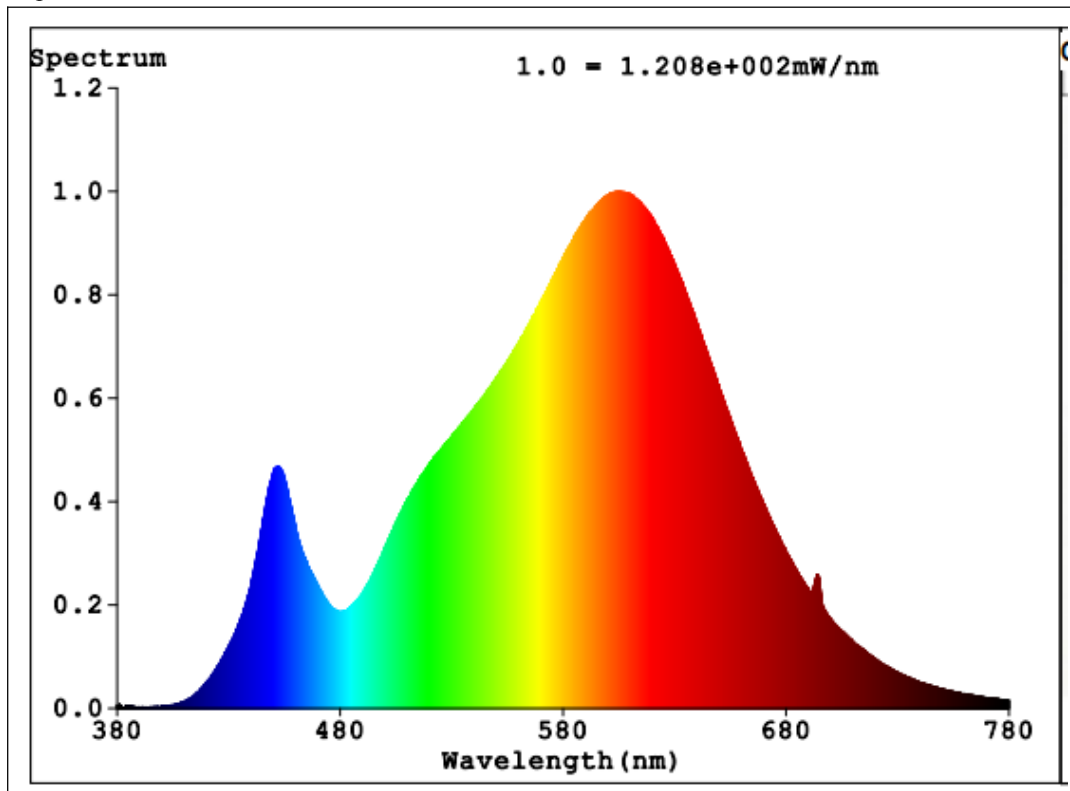
Special Color Rendering Indices			
R1	82	R9	13
R2	90	R10	77
R3	97	R11	80
R4	82	R12	70
R5	81	R13	83
R6	88	R14	98
R7	85	R15	75
R8	62	--	--

Goniophotometer Method:

Parameter	Result
Test Voltage (V)	119.9
Frequency (Hz)	60
Total Luminous (lm)	7876.6
Luminous Efficacy (lm/W)	85.37
Beam Angle°	100.6
Center Beam Candle Power (cd)	3526
S/MH(C0/180)	1.33
S/MH(C90/270)	1.32

Spectral Power Distribution

Spectral Power Distribution:



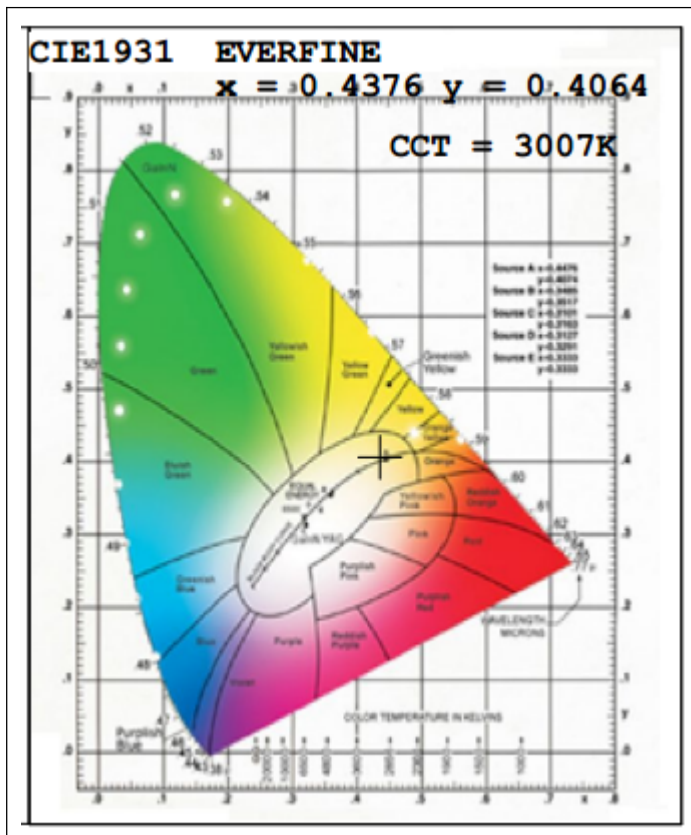
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Chromaticity Diagram



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Zonal Lumen Tabulation

Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Luminaire
0-30	2,802.3	35.6%	35.6%
0-40	4,688.5	59.5%	59.5%
0-60	7,581.2	96.3%	96.3%
60-90	276.0	3.5%	3.5%
70-100	26.7	0.3%	0.3%
90-120	1.9	0%	0%
0-90	7,857.2	99.8%	99.8%
90-180	18.0	0.2%	0.2%
0-180	7,875.2	100%	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	329.9	4.2%	90-100	0.0	0%
10-20	963.9	12.2%	100-110	0.4	0%
20-30	1,508.5	19.2%	110-120	1.5	0%
30-40	1,886.2	24.0%	120-130	2.9	0%
40-50	1,870.2	23.7%	130-140	3.7	0%
50-60	1,022.5	13.0%	140-150	3.6	0%
60-70	249.4	3.2%	150-160	3.0	0%
70-80	24.0	0.3%	160-170	2.0	0%
80-90	2.7	0.0%	170-180	0.8	0%

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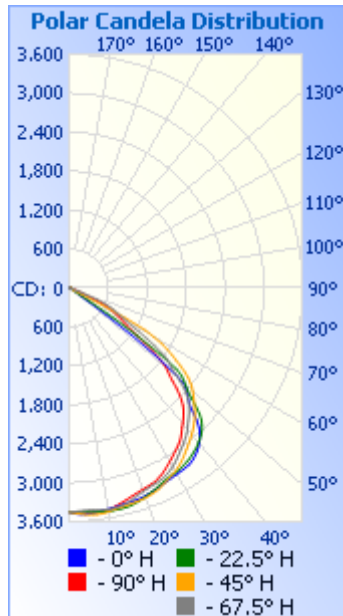
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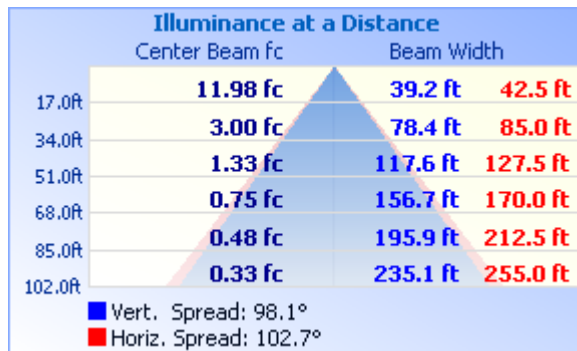
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Photometric Data



Illuminance Plots



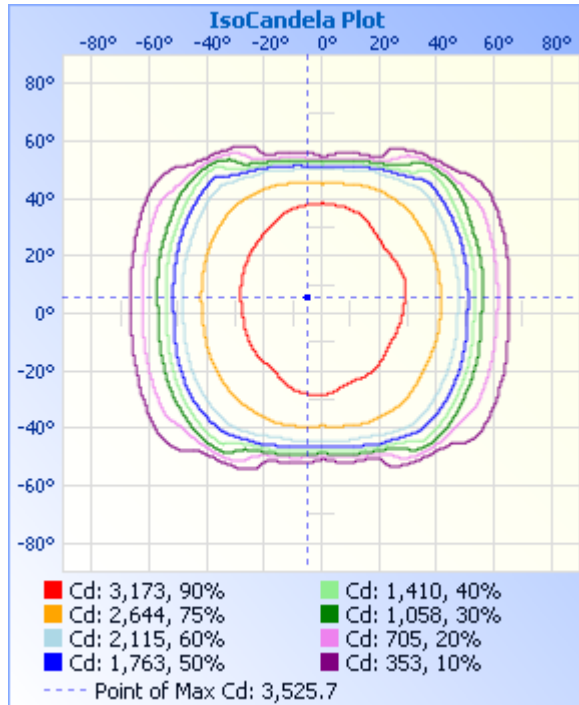
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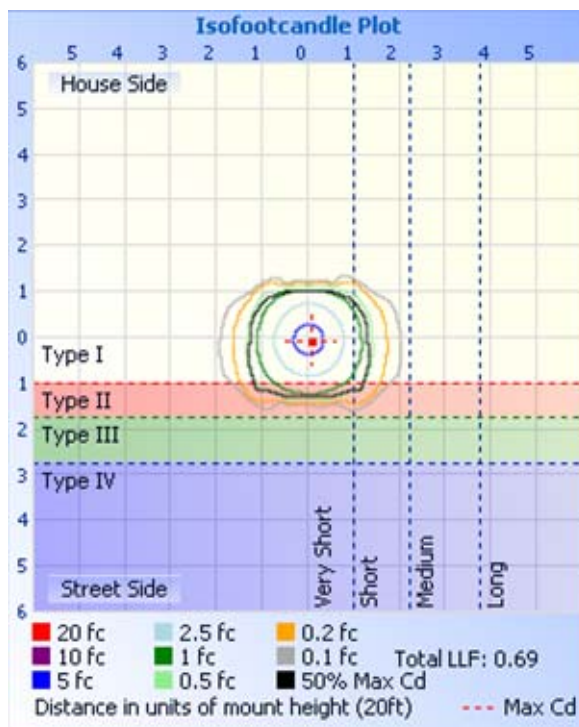
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ISOCANDELA DIAGRAM



ISOLUX DIAGRAM



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Candela Table - Type C

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	3464	3464	3464	3464	3464	3464	3464	3464	3464	3464	3464	3464	3464	3464	3464	3464	3464
1	3479	3466	3474	3459	3466	3463	3455	3456	3447	3457	3453	3466	3465	3467	3473	3473	3479
2	3493	3467	3487	3453	3471	3465	3445	3449	3428	3452	3447	3469	3470	3477	3480	3478	3493
3	3500	3467	3500	3451	3474	3466	3436	3443	3411	3443	3444	3467	3481	3487	3486	3484	3500
4	3504	3469	3509	3448	3479	3469	3427	3438	3391	3431	3440	3463	3485	3493	3490	3491	3504
5	3502	3473	3517	3448	3482	3473	3416	3436	3373	3420	3435	3455	3483	3494	3491	3496	3502
6	3495	3482	3522	3450	3486	3475	3409	3430	3359	3413	3431	3441	3482	3498	3493	3499	3495
7	3489	3486	3526	3459	3489	3473	3404	3426	3349	3401	3420	3425	3478	3498	3492	3500	3489
8	3480	3494	3525	3467	3490	3471	3400	3420	3343	3389	3406	3409	3471	3498	3486	3500	3480
9	3475	3499	3519	3471	3489	3470	3395	3413	3343	3379	3395	3396	3465	3494	3480	3498	3475
10	3469	3505	3510	3475	3481	3466	3388	3407	3347	3368	3383	3390	3461	3493	3476	3493	3469
11	3464	3504	3497	3473	3466	3458	3384	3397	3347	3358	3375	3386	3457	3489	3474	3491	3464
12	3461	3504	3488	3470	3448	3446	3381	3386	3344	3353	3366	3385	3450	3484	3474	3490	3461
13	3454	3504	3483	3465	3429	3433	3377	3374	3343	3346	3360	3385	3441	3476	3476	3489	3454
14	3447	3503	3478	3455	3411	3413	3370	3361	3338	3340	3358	3381	3431	3472	3477	3487	3447
15	3442	3499	3473	3443	3395	3394	3361	3348	3333	3330	3353	3372	3420	3465	3476	3481	3442
16	3441	3493	3471	3424	3375	3370	3350	3334	3324	3321	3343	3362	3407	3462	3471	3472	3441
17	3438	3481	3465	3402	3357	3347	3338	3319	3314	3312	3332	3347	3397	3454	3459	3466	3438
18	3434	3467	3460	3380	3341	3326	3321	3309	3304	3299	3318	3330	3386	3441	3445	3456	3434
19	3430	3452	3456	3362	3326	3314	3302	3294	3292	3281	3303	3311	3372	3425	3425	3449	3430
20	3422	3435	3450	3345	3313	3303	3283	3284	3278	3265	3286	3294	3356	3406	3407	3438	3422
21	3412	3418	3441	3332	3304	3296	3263	3273	3264	3254	3270	3275	3335	3390	3390	3427	3412
22	3400	3401	3433	3320	3295	3287	3241	3264	3249	3237	3257	3254	3319	3369	3372	3415	3400
23	3389	3384	3419	3310	3283	3272	3220	3258	3235	3217	3241	3232	3299	3353	3356	3407	3389
24	3378	3364	3404	3303	3270	3255	3199	3247	3224	3199	3219	3205	3279	3333	3338	3400	3378
25	3368	3346	3380	3291	3249	3233	3177	3233	3215	3178	3195	3179	3254	3315	3317	3388	3368
26	3356	3329	3357	3280	3226	3204	3154	3215	3206	3161	3172	3153	3226	3297	3296	3372	3356
27	3346	3312	3336	3263	3198	3174	3135	3196	3194	3147	3152	3125	3195	3273	3275	3356	3346
28	3337	3302	3314	3243	3167	3142	3114	3173	3180	3132	3129	3097	3164	3250	3253	3338	3337

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29	3328	3294	3292	3220	3135	3109	3090	3151	3160	3116	3106	3069	3134	3227	3231	3321	3328
30	3324	3290	3272	3193	3103	3077	3066	3123	3141	3099	3083	3039	3104	3200	3204	3302	3324
31	3318	3281	3248	3160	3072	3055	3041	3094	3112	3082	3055	3006	3072	3170	3177	3285	3318
32	3314	3271	3220	3127	3040	3025	3012	3066	3083	3061	3026	2971	3043	3141	3150	3270	3314
33	3308	3261	3188	3092	3008	2993	2981	3039	3054	3037	2990	2934	3016	3110	3126	3254	3308
34	3300	3247	3154	3056	2978	2961	2947	3010	3015	3011	2951	2894	2983	3078	3100	3239	3300
35	3286	3229	3118	3024	2947	2927	2911	2979	2966	2978	2905	2852	2940	3044	3075	3220	3286
36	3264	3209	3084	2992	2915	2892	2872	2945	2910	2939	2859	2805	2896	3005	3045	3198	3264
37	3239	3188	3050	2957	2871	2852	2828	2905	2838	2890	2814	2759	2853	2960	3015	3176	3239
38	3206	3165	3017	2925	2821	2808	2780	2852	2744	2836	2767	2714	2809	2910	2981	3150	3206
39	3169	3142	2982	2887	2773	2758	2732	2784	2626	2766	2718	2666	2762	2860	2943	3120	3169
40	3128	3111	2946	2843	2729	2706	2685	2694	2491	2671	2669	2618	2708	2813	2902	3085	3128
41	3081	3082	2912	2797	2685	2652	2637	2577	2371	2546	2618	2567	2649	2765	2861	3047	3081
42	3020	3049	2876	2752	2640	2596	2587	2440	2276	2404	2567	2513	2584	2710	2814	3005	3020
43	2942	3008	2835	2710	2592	2539	2537	2303	2205	2272	2511	2454	2506	2654	2770	2961	2942
44	2838	2957	2793	2669	2532	2480	2483	2189	2135	2166	2449	2381	2411	2594	2721	2903	2838
45	2702	2893	2747	2622	2460	2416	2426	2092	2059	2083	2378	2296	2307	2523	2671	2831	2702
46	2582	2800	2696	2571	2372	2347	2362	2007	1942	2003	2305	2197	2201	2444	2621	2735	2582
47	2516	2675	2645	2507	2269	2270	2287	1919	1617	1926	2220	2093	2107	2352	2565	2604	2516
48	2463	2538	2596	2435	2156	2179	2190	1832	1188	1804	2114	1990	2035	2258	2505	2478	2463
49	2403	2434	2547	2342	2059	2076	2072	1643	743	1505	1992	1910	1961	2160	2439	2390	2403
50	2335	2359	2496	2237	1984	1975	1943	1288	374	1095	1859	1836	1837	2070	2373	2318	2335
51	2119	2285	2441	2122	1900	1888	1819	870	210	673	1741	1729	1678	1999	2311	2245	2119
52	1687	2206	2380	2015	1765	1803	1700	477	174	323	1637	1578	1512	1927	2240	2166	1687
53	1199	2073	2305	1942	1607	1685	1590	223	158	179	1539	1403	1345	1823	2162	1968	1199
54	710	1736	2214	1868	1437	1530	1490	162	144	146	1432	1218	1189	1664	2059	1576	710
55	330	1287	2102	1746	1277	1359	1397	141	131	131	1317	1056	1070	1490	1951	1103	330
56	205	835	1993	1587	1145	1193	1299	128	120	118	1078	941	996	1316	1845	627	205
57	177	384	1894	1428	1062	1053	1086	115	109	107	741	873	928	1154	1739	271	177
58	164	194	1782	1269	997	965	753	105	95	97	411	807	869	1027	1633	167	164
59	152	153	1670	1119	934	895	417	94	80	86	179	741	812	958	1509	144	152
60	141	139	1511	1019	874	826	185	83	67	74	104	674	754	900	1386	131	141

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61	131	126	1352	948	815	755	112	70	57	62	87	609	696	841	1027	120	131
62	118	116	989	881	757	684	94	59	48	52	76	549	638	776	595	111	118
63	102	106	559	818	695	614	83	49	41	44	67	488	583	712	240	101	102
64	85	95	222	760	631	543	73	41	35	38	58	423	491	646	108	88	85
65	70	81	111	699	559	471	63	36	30	33	49	293	321	580	85	74	70
66	57	68	92	634	406	369	54	31	26	28	41	185	231	515	74	61	57
67	46	56	80	569	272	232	45	27	23	25	35	152	190	358	65	50	46
68	38	45	69	460	228	176	37	23	20	22	30	125	160	221	56	40	38
69	32	38	60	276	197	146	31	20	18	19	25	99	133	182	47	34	32
70	27	31	50	216	167	121	26	18	16	17	22	73	107	157	38	28	27
71	23	26	40	188	142	94	23	16	14	15	19	30	42	129	30	23	23
72	20	22	32	159	105	37	19	14	13	13	16	24	27	49	25	20	20
73	17	19	26	109	34	27	16	13	11	11	14	21	23	23	20	17	17
74	15	16	21	33	28	24	14	11	9	10	12	19	20	20	17	15	15
75	13	14	18	25	25	21	12	9	8	8	10	17	17	18	14	13	13
76	11	13	15	22	22	18	10	7	6	7	9	15	15	15	12	11	11
77	10	11	13	19	19	16	9	6	6	6	7	13	13	13	10	10	10
78	9	9	11	16	16	14	7	5	5	5	5	11	12	12	8	9	9
79	8	8	9	14	14	12	6	4	4	4	4	9	10	10	7	7	8
80	7	7	8	12	12	10	4	3	3	3	3	7	9	8	6	6	7
81	6	6	6	10	10	8	3	3	2	2	2	6	7	7	5	5	6
82	5	5	5	8	9	6	2	2	2	2	2	4	6	6	4	4	5
83	4	4	4	7	7	5	1	2	2	2	1	2	5	4	3	4	4
84	3	3	3	5	5	3	1	2	2	2	1	1	3	3	3	3	3
85	2	3	2	3	3	1	1	2	2	2	1	0	2	2	2	2	2
86	2	2	2	2	2	0	1	1	2	1	1	0	0	1	1	2	2
87	2	1	1	1	1	0	1	1	2	1	1	0	0	0	1	2	2
88	2	1	1	1	0	0	0	1	1	1	0	0	0	0	1	1	2
89	1	1	1	0	0	0	0	1	0	0	0	0	0	0	0	1	1
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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2.2 Electrical, Photometric and Chromaticity Measurements (Refer to Work Instruction QD25)	IES LM-79 2008
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Test date	2014-08-22	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	71355		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
140709-28	120.0	60	0.7868	93.75	0.9929	7.8
	277.0	60	0.3673	94.81	0.9319	14.51

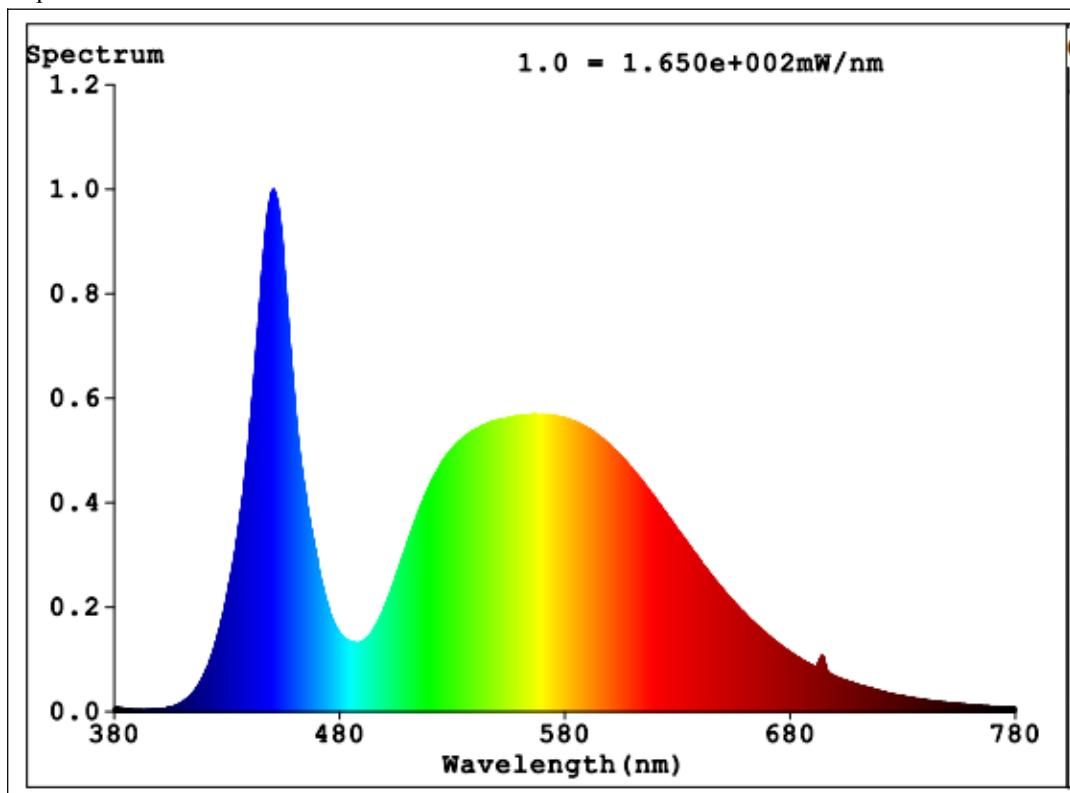
Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	76.4
R9	0
CCT (K)	5290
Chromaticity (x, y)	x=0.3373 y=0.3426
Chromaticity (u', v')	u'=0.2096 v'=0.4791
Duv	-0.0013
Total Luminous (lm)	8396
Luminous Efficacy (lm/W)	89.56

Special Color Rendering Indices			
R1	75	R9	0
R2	81	R10	52
R3	82	R11	74
R4	77	R12	48
R5	76	R13	76
R6	72	R14	90
R7	84	R15	72
R8	64	--	--

Spectral Power Distribution

Spectral Power Distribution:



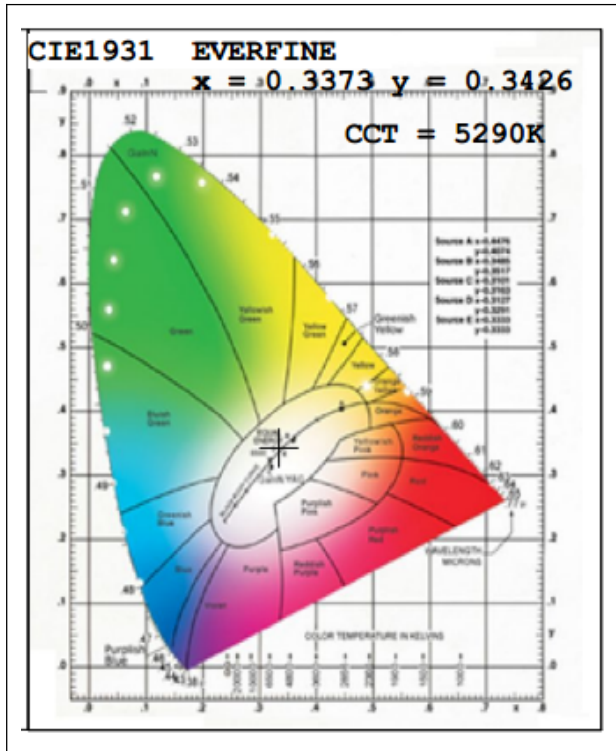
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Chromaticity Diagram



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3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-336	2 meter Integrating Sphere	2014-07-01	2015-06-30
ST-R-331	Spectral analysis system HAAS-2000	2014-07-01	2015-06-30
D204	Standard Lamp	2014-07-01	2015-06-30
PF2010	Power Meter for Integrating Sphere	2014-07-01	2015-06-30
EE-09	Goniophotometer system	2014-07-01	2015-06-30
D908S	Standard Lamp	2014-07-01	2015-06-30
PF210	Power Meter for Goniophotometer	2014-07-01	2015-06-30
ST-R-181A	Temperature Tester	2014-07-01	2015-06-30

******* END OF DATASHEET PACKAGE *******

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