

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P909022

Luminaire Tested: DFN2DIP-SQ2F0-070D030US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909022
REPORT IS A COMBINATION OF REPORTS P899780 AND P896659
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-070D030US840-RLLFLL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

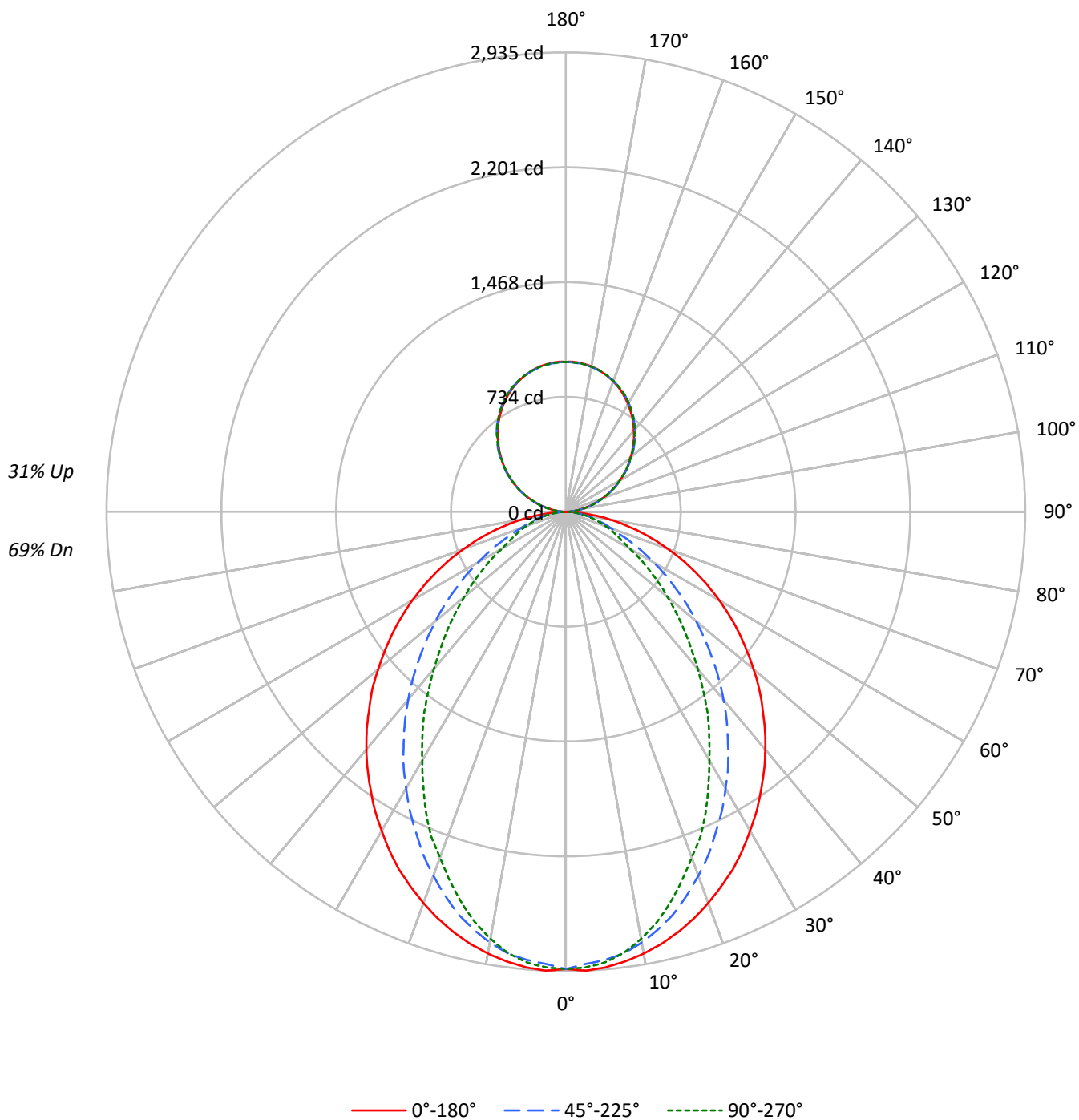
Lumens per Lamp: N/A
Luminaire Lumens: 8689.8 lumens
Efficiency: N/A
Efficacy: 96.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 90.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	112	112	112	112	106	106	106	106	94	94	94	83	83	83	74	74	74
1	103	99	95	91	97	93	90	87	84	81	79	75	73	71	66	65	64
2	94	87	81	76	89	82	77	73	74	70	66	66	63	60	59	57	55
3	86	77	70	64	81	73	67	62	66	61	57	59	55	52	53	50	47
4	79	69	61	55	75	65	58	53	59	53	49	53	49	45	48	44	41
5	73	62	54	48	69	59	51	46	53	47	43	48	43	40	43	40	36
6	68	56	48	42	64	53	46	40	48	42	38	44	39	35	40	36	32
7	63	51	43	37	59	48	41	36	44	38	34	40	35	31	36	32	29
8	59	46	39	33	55	44	37	32	41	35	30	37	32	28	34	29	26
9	55	43	35	30	52	41	34	29	37	31	27	34	29	26	31	27	24
10	51	39	32	27	49	38	31	26	35	29	25	32	27	23	29	25	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6424	6424	6424
5°	6423	6308	6354
10°	6349	6171	6138
15°	6250	5953	5810
20°	6123	5659	5411
25°	5994	5332	5026
30°	5823	4998	4540
35°	5655	4640	4114
40°	5484	4271	3627
45°	5287	3864	3186
50°	5081	3454	2756
55°	4865	3018	2343
60°	4616	2565	1920
65°	4327	2105	1718
70°	3977	1677	1541
75°	3537	1451	1385
80°	2904	1178	1173
85°	1890	732	835

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 5287 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	273.8	3.2
10°-20°	751.7	8.7
20°-30°	1055.3	12.1
30°-40°	1150.4	13.2
40°-50°	1057.3	12.2
50°-60°	830.4	9.6
60°-70°	540.5	6.2
70°-80°	278.2	3.2
80°-90°	73.7	0.8
90°-100°	59.3	0.7
100°-110°	188.4	2.2
110°-120°	322.4	3.7
120°-130°	424.0	4.9
130°-140°	475.9	5.5
140°-150°	466.7	5.4
150°-160°	391.5	4.5
160°-170°	259.6	3.0
170°-180°	90.7	1.0
0°-30°	2080.9	23.9
0°-40°	3231.2	37.2
0°-60°	5118.9	58.9
0°-90°	6011.4	69.2
90°-120°	570.1	6.6
90°-150°	1936.6	22.3
90°-180°	2678.0	30.8
0°-180°	8689.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2922	2922	2922	2922	2922	
5°	2922	2908	2874	2898	2890	277
15°	2779	2750	2660	2610	2583	783
25°	2522	2438	2263	2155	2115	1160
35°	2173	2038	1806	1639	1581	1360
45°	1777	1600	1322	1134	1071	1372
55°	1351	1145	859	701	651	1207
65°	912	698	460	370	362	904
75°	486	301	212	193	190	515
85°	114	58	50	50	50	130
90°	1	10	28	27	28	8
95°	42	50	52	52	50	47
105°	174	176	178	179	179	184
115°	324	328	327	326	324	320
125°	471	478	475	473	472	420
135°	609	618	619	618	616	470
145°	739	745	749	750	747	462
155°	845	847	850	854	851	389
165°	919	918	918	924	920	259
175°	956	954	952	958	953	91
180°	958	958	958	958	958	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2921.6	2921.6	2921.6	2921.6	2921.6
2.5°	2934.8	2921.6	2892.5	2919.1	2913.8
5°	2921.6	2908.4	2874.0	2897.8	2889.9
7.5°	2897.8	2882.1	2845.1	2855.4	2842.3
10°	2866.1	2847.6	2794.8	2786.7	2771.0
12.5°	2826.5	2802.7	2731.2	2715.4	2686.2
15°	2778.8	2749.7	2659.9	2609.7	2583.3
17.5°	2723.3	2681.0	2569.9	2511.7	2469.4
20°	2659.9	2606.9	2474.8	2408.8	2350.5
22.5°	2591.2	2530.3	2376.8	2287.0	2247.6
25°	2522.4	2437.7	2263.2	2155.0	2115.2
27.5°	2440.5	2350.5	2157.5	2033.3	1972.4
30°	2353.3	2252.6	2041.0	1906.4	1834.9
32.5°	2268.6	2146.9	1930.3	1771.5	1705.3
35°	2173.4	2038.5	1806.0	1639.4	1581.0
37.5°	2080.9	1935.3	1689.6	1506.9	1441.1
40°	1983.0	1824.5	1567.8	1380.2	1311.4
42.5°	1882.6	1713.4	1446.3	1250.5	1184.7
45°	1776.9	1599.5	1322.1	1134.2	1070.8
47.5°	1676.4	1488.7	1203.2	1015.2	957.2
50°	1565.3	1377.7	1086.7	904.1	848.9
52.5°	1456.7	1258.4	975.6	801.1	750.9
55°	1351.0	1144.8	859.2	700.7	650.6
57.5°	1242.7	1031.2	756.3	608.1	565.8
60°	1131.7	920.1	647.7	513.1	470.7
62.5°	1023.3	811.8	555.1	428.4	407.3
65°	912.2	697.9	460.1	370.3	362.1
67.5°	806.5	592.2	370.3	325.1	317.3
70°	695.4	489.2	306.6	280.2	269.5
72.5°	589.7	393.8	256.4	235.4	230.0
75°	486.5	301.2	211.5	193.0	190.5
77.5°	383.4	214.0	166.6	155.9	150.7
80°	288.1	153.4	126.8	116.4	116.4
82.5°	200.9	103.2	87.3	81.9	81.9
85°	113.6	58.1	50.2	50.2	50.2
87.5°	42.3	21.0	21.0	18.5	18.5
90°	0.9	10.4	28.3	26.6	27.5
92.5°	17.9	24.2	25.1	26.0	26.0
95°	42.2	50.3	51.7	51.7	50.3
97.5°	70.2	77.7	80.9	80.9	80.9
100°	102.5	109.2	111.5	111.5	110.7
102.5°	136.6	141.6	144.7	145.6	144.7
105°	173.9	176.2	177.9	179.4	179.4
107.5°	210.9	214.3	214.3	214.9	210.9
110°	246.7	251.4	251.4	251.4	249.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	285.4	290.3	289.4	287.1	285.4
115°	323.6	328.1	326.7	325.9	323.6
117.5°	361.3	367.7	363.7	361.3	359.0
120°	399.5	405.9	399.5	399.5	396.9
122.5°	434.1	442.2	438.2	435.9	434.1
125°	470.6	477.8	475.4	472.8	472.0
127.5°	506.0	515.0	511.9	508.4	506.0
130°	539.3	549.7	548.3	546.5	543.3
132.5°	576.5	584.6	585.2	581.2	578.9
135°	608.6	617.5	619.4	618.4	616.1
137.5°	644.4	651.7	653.1	652.6	649.0
140°	675.9	683.2	687.2	687.2	684.0
142.5°	708.3	715.5	717.8	718.7	715.5
145°	738.9	744.7	749.3	750.1	747.0
147.5°	766.4	773.6	777.0	778.5	775.3
150°	794.7	799.6	802.7	805.4	802.7
152.5°	819.8	824.7	828.7	831.9	828.7
155°	845.0	847.2	849.8	853.8	851.3
157.5°	866.6	868.3	869.8	875.6	871.5
160°	886.0	887.7	888.6	893.4	890.0
162.5°	903.8	903.8	904.7	910.2	906.2
165°	919.2	918.3	918.3	924.0	920.0
167.5°	933.0	930.4	930.4	936.1	932.1
170°	943.4	941.1	940.3	946.0	941.1
172.5°	950.6	948.4	947.5	953.2	948.4
175°	956.4	954.1	952.4	958.2	953.2
177.5°	959.6	957.3	955.5	960.5	955.5
180°	958.2	958.2	958.2	958.2	958.2

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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	15.12	16.14	15.90	16.94	17.91	11.08	12.10	11.86	12.90	13.87
	3H	16.79	17.70	17.59	18.51	19.51	12.27	13.18	13.06	13.98	14.98
	4H	17.40	18.25	18.21	19.07	20.08	12.71	13.57	13.52	14.38	15.40
	6H	17.81	18.60	18.64	19.43	20.45	13.03	13.82	13.85	14.64	15.67
	8H	17.94	18.69	18.77	19.53	20.56	13.11	13.86	13.95	14.71	15.73
	12H	18.00	18.71	18.83	19.55	20.60	13.16	13.87	13.99	14.71	15.76
4H	2H	15.16	16.01	15.97	16.83	17.84	11.69	12.55	12.51	13.36	14.37
	3H	16.98	17.69	17.81	18.54	19.57	13.04	13.75	13.86	14.60	15.62
	4H	17.67	18.31	18.51	19.16	20.22	13.58	14.22	14.42	15.07	16.13
	6H	18.17	18.73	19.03	19.60	20.66	13.99	14.54	14.84	15.41	16.48
	8H	18.34	18.86	19.20	19.73	20.80	14.11	14.63	14.97	15.49	16.57
	12H	18.43	18.90	19.31	19.79	20.87	14.17	14.64	15.05	15.52	16.60
8H	4H	17.64	18.16	18.50	19.03	20.10	13.86	14.38	14.72	15.24	16.32
	6H	18.19	18.62	19.08	19.53	20.61	14.36	14.79	15.25	15.70	16.77
	8H	18.40	18.78	19.30	19.68	20.77	14.54	14.92	15.43	15.82	16.91
	12H	18.53	18.87	19.43	19.76	20.90	14.65	14.98	15.55	15.88	17.02
12H	4H	17.60	18.07	18.48	18.96	20.03	13.87	14.34	14.75	15.22	16.30
	6H	18.17	18.55	19.07	19.45	20.54	14.40	14.78	15.30	15.69	16.78
	8H	18.38	18.72	19.28	19.61	20.76	14.60	14.94	15.50	15.84	16.98

END OF REPORT