

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: P906578

Luminaire Tested: DFN2DIP-SQ3F0-100D090US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906578
REPORT IS A COMBINATION OF REPORTS P899964 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-100D090US835-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

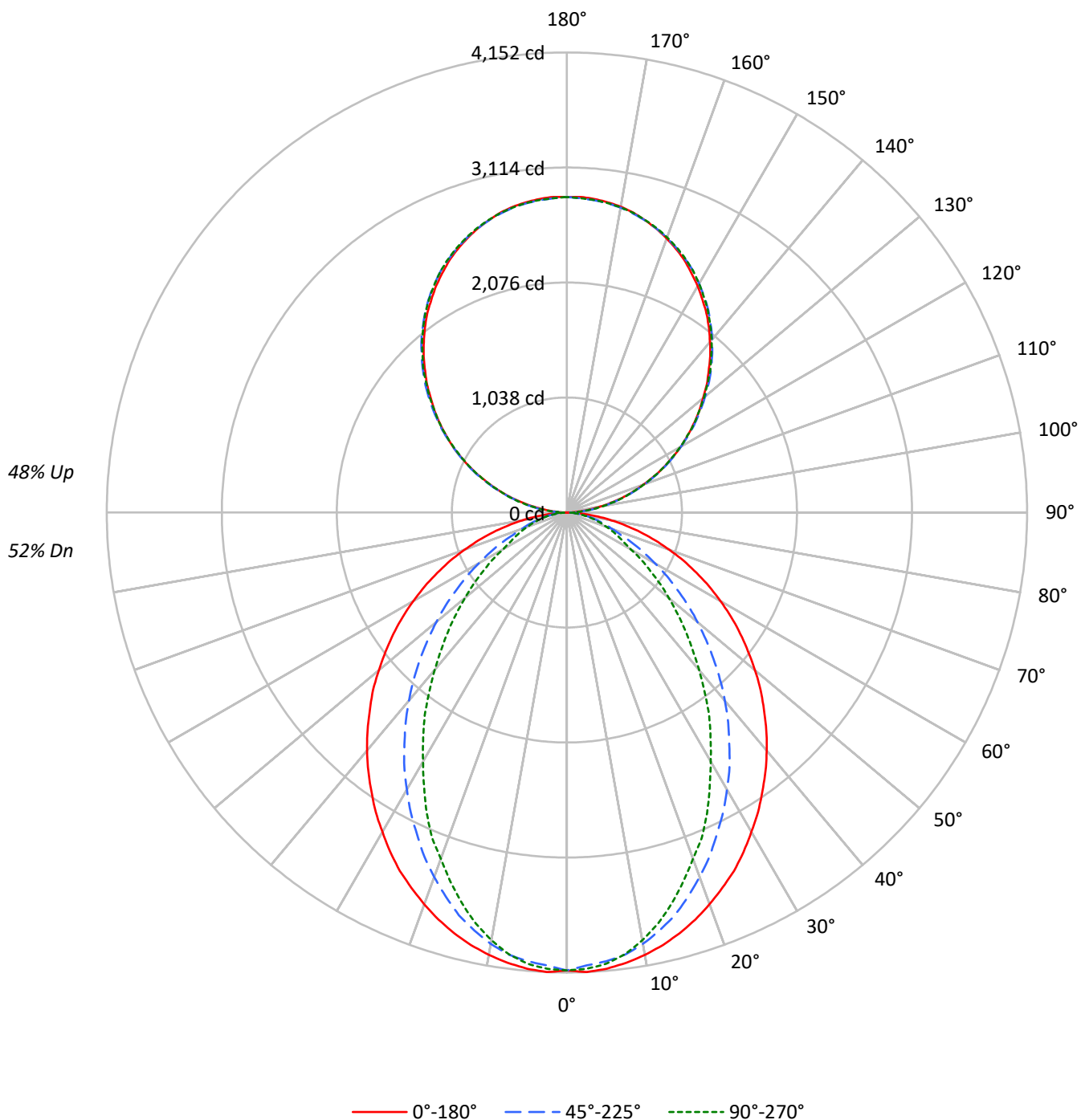
Lumens per Lamp: N/A
Luminaire Lumens: 16465.0 lumens
Efficiency: N/A
Efficacy: 98.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 167
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
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	108	108	108	108	99	99	99	99	84	84	84	70	70	70	58	58	58
1	99	94	91	87	91	88	84	82	75	72	70	63	61	60	52	51	50
2	90	83	77	72	83	77	72	68	66	62	59	56	53	51	46	44	43
3	83	73	66	61	76	68	62	57	59	54	50	50	46	43	41	39	37
4	76	65	58	52	70	61	54	49	52	47	43	45	41	38	37	34	32
5	70	59	51	45	64	55	48	42	47	42	38	40	36	33	34	31	28
6	64	53	45	39	60	49	42	37	43	37	33	37	32	29	31	28	25
7	60	48	40	35	55	45	38	33	39	33	29	33	29	26	28	25	23
8	56	43	36	31	51	41	34	29	36	30	26	31	26	23	26	23	20
9	52	40	32	28	48	37	31	26	33	27	24	28	24	21	24	21	19
10	48	37	30	25	45	34	28	24	30	25	21	26	22	19	23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4736	4736	4736
5°	4740	4657	4689
10°	4690	4563	4535
15°	4623	4409	4297
20°	4534	4198	4007
25°	4444	3962	3726
30°	4323	3721	3371
35°	4205	3462	3058
40°	4084	3194	2701
45°	3944	2897	2377
50°	3799	2597	2060
55°	3648	2278	1756
60°	3472	1944	1444
65°	3270	1606	1298
70°	3024	1289	1173
75°	2716	1130	1063
80°	2269	938	917
85°	1539	611	680

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3944 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	387.3	2.4
10°-20°	1063.3	6.5
20°-30°	1492.9	9.1
30°-40°	1627.4	9.9
40°-50°	1495.7	9.1
50°-60°	1174.7	7.1
60°-70°	764.6	4.6
70°-80°	393.6	2.4
80°-90°	108.6	0.7
90°-100°	176.1	1.1
100°-110°	559.6	3.4
110°-120°	957.7	5.8
120°-130°	1259.5	7.6
130°-140°	1413.8	8.6
140°-150°	1386.4	8.4
150°-160°	1163.0	7.1
160°-170°	771.2	4.7
170°-180°	269.6	1.6
0°-30°	2943.6	17.9
0°-40°	4571.0	27.8
0°-60°	7241.3	44.0
0°-90°	8508.1	51.7
90°-120°	1693.5	10.3
90°-150°	5753.1	34.9
90°-180°	7957.0	48.3
0°-180°	16465.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4133	4133	4133	4133	4133	
5°	4133	4114	4066	4099	4088	392
15°	3931	3890	3763	3692	3654	1108
25°	3568	3448	3202	3048	2992	1641
35°	3075	2884	2555	2319	2236	1924
45°	2514	2263	1870	1604	1515	1941
55°	1911	1620	1216	991	920	1708
65°	1290	987	651	524	512	1279
75°	688	426	299	273	269	728
85°	161	82	71	71	71	184
90°	3	31	84	79	82	16
95°	125	149	154	154	149	139
105°	517	523	529	533	533	545
115°	961	975	970	968	961	951
125°	1398	1419	1412	1405	1402	1249
135°	1808	1835	1840	1837	1830	1398
145°	2195	2212	2226	2228	2219	1372
155°	2510	2517	2525	2537	2529	1155
165°	2730	2728	2728	2745	2733	770
175°	2841	2834	2829	2846	2832	270
180°	2846	2846	2846	2846	2846	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4133.0	4133.0	4133.0	4133.0	4133.0
2.5°	4151.6	4133.0	4091.7	4129.4	4121.9
5°	4133.0	4114.3	4065.5	4099.3	4088.1
7.5°	4099.3	4077.0	4024.6	4039.3	4020.7
10°	4054.4	4028.2	3953.6	3942.1	3919.9
12.5°	3998.5	3964.7	3863.5	3841.3	3800.0
15°	3931.0	3889.7	3762.7	3691.7	3654.4
17.5°	3852.4	3792.5	3635.4	3553.2	3493.3
20°	3762.7	3687.7	3500.8	3407.6	3325.0
22.5°	3665.5	3579.4	3362.3	3235.4	3179.4
25°	3568.3	3448.5	3201.6	3048.4	2992.1
27.5°	3452.4	3325.0	3052.0	2876.2	2790.1
30°	3329.0	3186.5	2887.3	2696.9	2595.7
32.5°	3209.2	3036.9	2730.6	2506.0	2412.3
35°	3074.6	2883.8	2554.8	2319.1	2236.5
37.5°	2943.7	2737.7	2390.1	2131.8	2038.5
40°	2805.2	2581.0	2217.9	1952.4	1855.2
42.5°	2663.1	2423.8	2046.1	1769.1	1675.8
45°	2513.5	2262.7	1870.3	1604.4	1514.7
47.5°	2371.5	2106.0	1702.0	1436.1	1354.0
50°	2214.3	1948.8	1537.3	1279.0	1200.8
52.5°	2060.7	1780.2	1380.2	1133.3	1062.3
55°	1911.1	1619.5	1215.5	991.3	920.2
57.5°	1758.0	1458.7	1069.9	860.3	800.4
60°	1600.8	1301.6	916.3	725.8	665.9
62.5°	1447.6	1148.4	785.3	606.0	576.2
65°	1290.5	987.3	650.8	523.8	512.3
67.5°	1140.9	837.7	523.8	459.9	448.8
70°	983.7	692.1	433.7	396.4	381.4
72.5°	834.1	557.1	362.7	332.9	325.4
75°	688.1	426.2	299.2	273.0	269.4
77.5°	542.5	302.8	235.7	220.6	213.1
80°	407.5	217.1	179.4	164.7	164.7
82.5°	284.1	146.0	123.4	115.9	115.9
85°	160.7	82.1	71.0	71.0	71.0
87.5°	59.9	29.8	29.8	26.2	26.2
90°	2.6	30.9	84.1	78.9	81.5
92.5°	53.2	72.1	74.7	77.2	77.2
95°	125.3	149.3	153.6	153.6	149.3
97.5°	208.5	230.8	240.3	240.3	240.3
100°	304.6	324.4	331.2	331.2	328.7
102.5°	405.9	420.5	429.9	432.5	429.9
105°	516.6	523.4	528.6	532.9	532.9
107.5°	626.4	636.7	636.7	638.4	626.4
110°	732.8	746.6	746.6	746.6	739.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	847.8	862.4	859.8	853.0	847.8
115°	961.1	974.8	970.5	968.0	961.1
117.5°	1073.5	1092.4	1080.4	1073.5	1066.6
120°	1186.8	1205.6	1186.8	1186.8	1179.0
122.5°	1289.7	1313.8	1301.8	1294.9	1289.7
125°	1397.9	1419.3	1412.5	1404.7	1402.2
127.5°	1503.4	1530.0	1520.6	1510.3	1503.4
130°	1602.1	1633.0	1628.7	1623.5	1614.1
132.5°	1712.8	1736.8	1738.5	1726.5	1719.7
135°	1808.0	1834.6	1839.8	1837.2	1830.4
137.5°	1914.4	1935.9	1940.2	1938.5	1928.2
140°	2008.0	2029.4	2041.4	2041.4	2032.0
142.5°	2104.1	2125.5	2132.4	2135.0	2125.5
145°	2195.1	2212.2	2225.9	2228.5	2219.1
147.5°	2276.6	2298.0	2308.3	2312.6	2303.2
150°	2360.7	2375.3	2384.7	2392.4	2384.7
152.5°	2435.3	2449.9	2461.9	2471.4	2461.9
155°	2510.0	2516.8	2524.6	2536.6	2528.9
157.5°	2574.3	2579.5	2583.8	2600.9	2588.9
160°	2631.8	2637.0	2639.6	2654.1	2643.8
162.5°	2685.0	2685.0	2687.6	2703.9	2691.9
165°	2730.5	2727.9	2727.9	2745.1	2733.1
167.5°	2771.7	2764.0	2764.0	2781.1	2769.1
170°	2802.6	2795.7	2793.2	2810.3	2795.7
172.5°	2824.0	2817.2	2814.6	2831.8	2817.2
175°	2841.2	2834.3	2829.2	2846.4	2831.8
177.5°	2850.6	2843.8	2838.6	2853.2	2838.6
180°	2846.4	2846.4	2846.4	2846.4	2846.4

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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	12.67	13.51	13.62	14.47	15.72	8.63	9.47	9.58	10.44	11.69
	3H	14.34	15.10	15.30	16.07	17.34	9.81	10.57	10.77	11.54	12.81
	4H	14.95	15.66	15.93	16.64	17.92	10.26	10.97	11.24	11.95	13.23
	6H	15.37	16.03	16.35	17.00	18.30	10.58	11.23	11.56	12.21	13.51
	8H	15.49	16.12	16.49	17.11	18.41	10.66	11.29	11.66	12.28	13.58
	12H	15.55	16.15	16.55	17.14	18.45	10.70	11.30	11.70	12.29	13.60
4H	2H	12.69	13.40	13.67	14.38	15.66	9.23	9.94	10.21	10.91	12.19
	3H	14.51	15.11	15.50	16.11	17.40	10.57	11.16	11.56	12.17	13.46
	4H	15.20	15.74	16.20	16.74	18.06	11.11	11.65	12.11	12.65	13.97
	6H	15.71	16.18	16.72	17.20	18.52	11.53	11.99	12.54	13.01	14.33
	8H	15.89	16.32	16.90	17.33	18.67	11.65	12.09	12.66	13.10	14.43
	12H	15.98	16.37	17.01	17.40	18.74	11.71	12.10	12.74	13.13	14.47
8H	4H	15.17	15.60	16.18	16.62	17.95	11.39	11.83	12.40	12.84	14.17
	6H	15.73	16.09	16.77	17.14	18.47	11.90	12.26	12.94	13.31	14.64
	8H	15.94	16.26	16.99	17.30	18.65	12.09	12.40	13.13	13.44	14.79
	12H	16.08	16.36	17.13	17.39	18.78	12.20	12.48	13.25	13.51	14.91
12H	4H	15.12	15.51	16.15	16.54	17.88	11.40	11.79	12.42	12.82	14.15
	6H	15.71	16.02	16.75	17.06	18.41	11.95	12.26	12.99	13.31	14.65
	8H	15.92	16.20	16.97	17.24	18.63	12.15	12.43	13.20	13.47	14.86

END OF REPORT