

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: P908739

Luminaire Tested: DFN2DIP-PN4F0-070D110US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908739
REPORT IS A COMBINATION OF REPORTS P901262 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-070D110US840-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

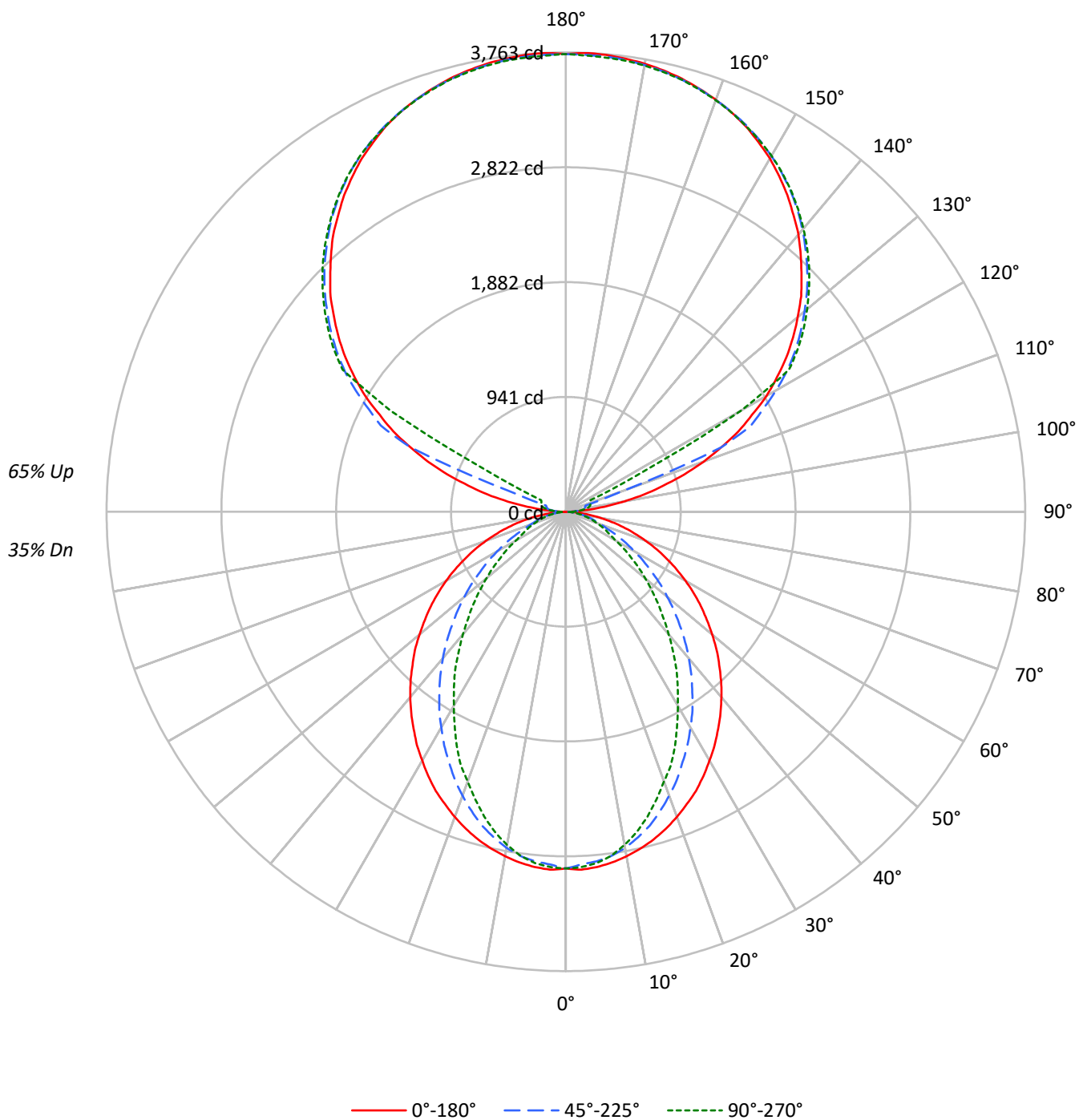
Lumens per Lamp: N/A
Luminaire Lumens: 17006.0 lumens
Efficiency: N/A
Efficacy: 107.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 158.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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	104	104	104	104	94	94	94	94	75	75	75	58	58	58	43	43	43
1	95	91	87	84	86	82	79	76	66	64	62	52	50	49	38	37	37
2	87	80	74	69	78	72	67	63	58	55	52	46	44	41	34	33	31
3	79	70	63	58	71	64	58	53	52	48	44	41	38	35	30	29	27
4	73	62	55	49	65	57	50	45	46	42	38	36	33	31	27	25	24
5	67	56	48	42	60	51	44	39	41	37	33	33	29	27	25	23	21
6	61	50	42	37	55	46	39	34	37	32	29	30	26	24	23	20	18
7	57	45	37	32	51	41	35	30	34	29	25	27	24	21	21	18	16
8	53	41	33	28	48	37	31	26	31	26	23	25	21	19	19	17	15
9	49	37	30	25	44	34	28	24	28	24	20	23	19	17	18	15	13
10	46	34	27	23	42	31	25	21	26	21	18	21	18	15	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2133	2133	2133
5°	2136	2099	2113
10°	2115	2058	2044
15°	2086	1990	1938
20°	2047	1897	1808
25°	2008	1792	1683
30°	1955	1684	1523
35°	1903	1569	1383
40°	1850	1449	1222
45°	1789	1316	1077
50°	1725	1182	934
55°	1659	1039	798
60°	1583	889	657
65°	1494	737	592
70°	1387	594	536
75°	1253	524	489
80°	1059	441	425
85°	737	296	322

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1998 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	273.8	1.6
10°-20°	751.7	4.4
20°-30°	1055.3	6.2
30°-40°	1150.4	6.8
40°-50°	1057.3	6.2
50°-60°	830.4	4.9
60°-70°	540.5	3.2
70°-80°	278.2	1.6
80°-90°	77.6	0.5
90°-100°	123.6	0.7
100°-110°	460.8	2.7
110°-120°	1222.2	7.2
120°-130°	2027.1	11.9
130°-140°	2153.3	12.7
140°-150°	2001.2	11.8
150°-160°	1608.9	9.5
160°-170°	1036.7	6.1
170°-180°	356.8	2.1
0°-30°	2080.9	12.2
0°-40°	3231.2	19.0
0°-60°	5118.9	30.1
0°-90°	6015.2	35.4
90°-120°	1806.7	10.6
90°-150°	7988.3	47.0
90°-180°	10991.0	64.6
0°-180°	17006.0	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°	3	32	54	68	73	16
95°	176	87	106	120	117	209
105°	825	906	166	195	206	881
115°	1560	1606	1674	418	223	1536
125°	2205	2241	2292	2311	2319	1967
135°	2729	2773	2797	2824	2819	2108
145°	3166	3163	3209	3228	3215	1980
155°	3486	3462	3494	3510	3489	1606
165°	3673	3657	3665	3684	3665	1038
175°	3757	3738	3744	3763	3736	358
180°	3749	3749	3749	3749	3749	

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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°	2.6	32.5	54.1	68.0	73.1
92.5°	68.0	57.1	65.0	70.6	73.1
95°	176.2	86.6	105.6	119.5	116.6
97.5°	317.3	95.0	138.1	146.5	149.2
100°	480.3	108.6	154.6	176.2	181.7
102.5°	659.0	653.9	160.1	189.8	198.1
105°	824.7	906.2	165.6	195.2	206.2
107.5°	1017.3	1084.9	171.1	200.7	211.7
110°	1201.8	1258.6	474.8	203.6	214.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1375.5	1424.1	1378.1	208.7	217.1
115°	1559.7	1605.8	1673.9	417.8	222.6
117.5°	1719.9	1774.0	1820.4	1432.2	721.5
120°	1899.0	1939.5	1988.5	2021.0	1654.8
122.5°	2050.7	2094.2	2148.6	2164.7	2167.7
125°	2205.3	2240.8	2292.3	2311.3	2319.4
127.5°	2346.4	2384.4	2425.3	2452.4	2455.0
130°	2479.4	2522.9	2552.5	2582.5	2580.0
132.5°	2615.0	2650.5	2680.2	2704.6	2702.1
135°	2729.2	2772.6	2796.7	2824.2	2818.6
137.5°	2848.3	2880.8	2908.2	2935.3	2927.2
140°	2965.0	2986.8	3016.5	3040.9	3027.4
142.5°	3062.8	3081.8	3116.9	3138.6	3125.0
145°	3165.9	3163.0	3209.0	3228.1	3214.6
147.5°	3255.2	3247.1	3293.2	3306.7	3296.1
150°	3342.2	3323.2	3366.6	3382.7	3369.2
152.5°	3415.3	3393.7	3434.2	3450.7	3431.7
155°	3485.9	3461.6	3494.1	3510.3	3488.7
157.5°	3542.8	3521.2	3545.7	3564.7	3542.8
160°	3591.8	3575.3	3591.8	3607.8	3588.9
162.5°	3634.9	3618.9	3632.4	3651.4	3626.9
165°	3673.0	3656.8	3664.9	3683.9	3664.9
167.5°	3702.9	3686.5	3694.9	3713.9	3689.4
170°	3727.4	3711.0	3716.4	3735.5	3711.0
172.5°	3743.5	3727.4	3732.9	3751.9	3727.4
175°	3757.0	3738.0	3743.5	3762.6	3735.5
177.5°	3762.6	3743.5	3746.4	3765.4	3740.9
180°	3749.0	3749.0	3749.0	3749.0	3749.0

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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	8.24	8.97	9.32	10.04	11.51	4.21	4.93	5.29	6.01	7.47
	3H	9.92	10.56	11.00	11.65	13.13	5.39	6.04	6.48	7.12	8.61
	4H	10.52	11.13	11.62	12.22	13.71	5.83	6.45	6.93	7.53	9.03
	6H	10.94	11.50	12.05	12.59	14.10	6.15	6.72	7.26	7.80	9.31
	8H	11.06	11.60	12.18	12.70	14.20	6.24	6.78	7.35	7.88	9.38
	12H	11.12	11.63	12.24	12.73	14.25	6.28	6.79	7.39	7.89	9.41
4H	2H	8.25	8.86	9.35	9.95	11.44	4.79	5.40	5.90	6.49	7.98
	3H	10.07	10.58	11.18	11.69	13.20	6.13	6.64	7.24	7.76	9.26
	4H	10.76	11.23	11.88	12.33	13.86	6.68	7.15	7.79	8.25	9.77
	6H	11.27	11.67	12.40	12.80	14.32	7.09	7.49	8.22	8.62	10.14
	8H	11.45	11.82	12.57	12.94	14.47	7.22	7.59	8.34	8.71	10.24
	12H	11.54	11.88	12.68	13.01	14.55	7.28	7.62	8.42	8.75	10.29
8H	4H	10.72	11.10	11.84	12.21	13.75	6.95	7.33	8.07	8.44	9.98
	6H	11.29	11.59	12.43	12.75	14.28	7.47	7.78	8.61	8.94	10.47
	8H	11.50	11.77	12.65	12.91	14.46	7.66	7.93	8.81	9.07	10.62
	12H	11.64	11.88	12.79	13.01	14.60	7.77	8.01	8.93	9.15	10.73
12H	4H	10.67	11.01	11.81	12.14	13.67	6.95	7.29	8.09	8.42	9.96
	6H	11.26	11.53	12.41	12.67	14.22	7.52	7.79	8.67	8.93	10.48
	8H	11.48	11.72	12.63	12.85	14.44	7.72	7.96	8.88	9.10	10.68

END OF REPORT