

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: P908491

Luminaire Tested: DFN2DIP-PN3F0-060D030US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908491
REPORT IS A COMBINATION OF REPORTS P901038 AND P897955
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN3F0-060D030US840-RLLONL
Description: 3 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

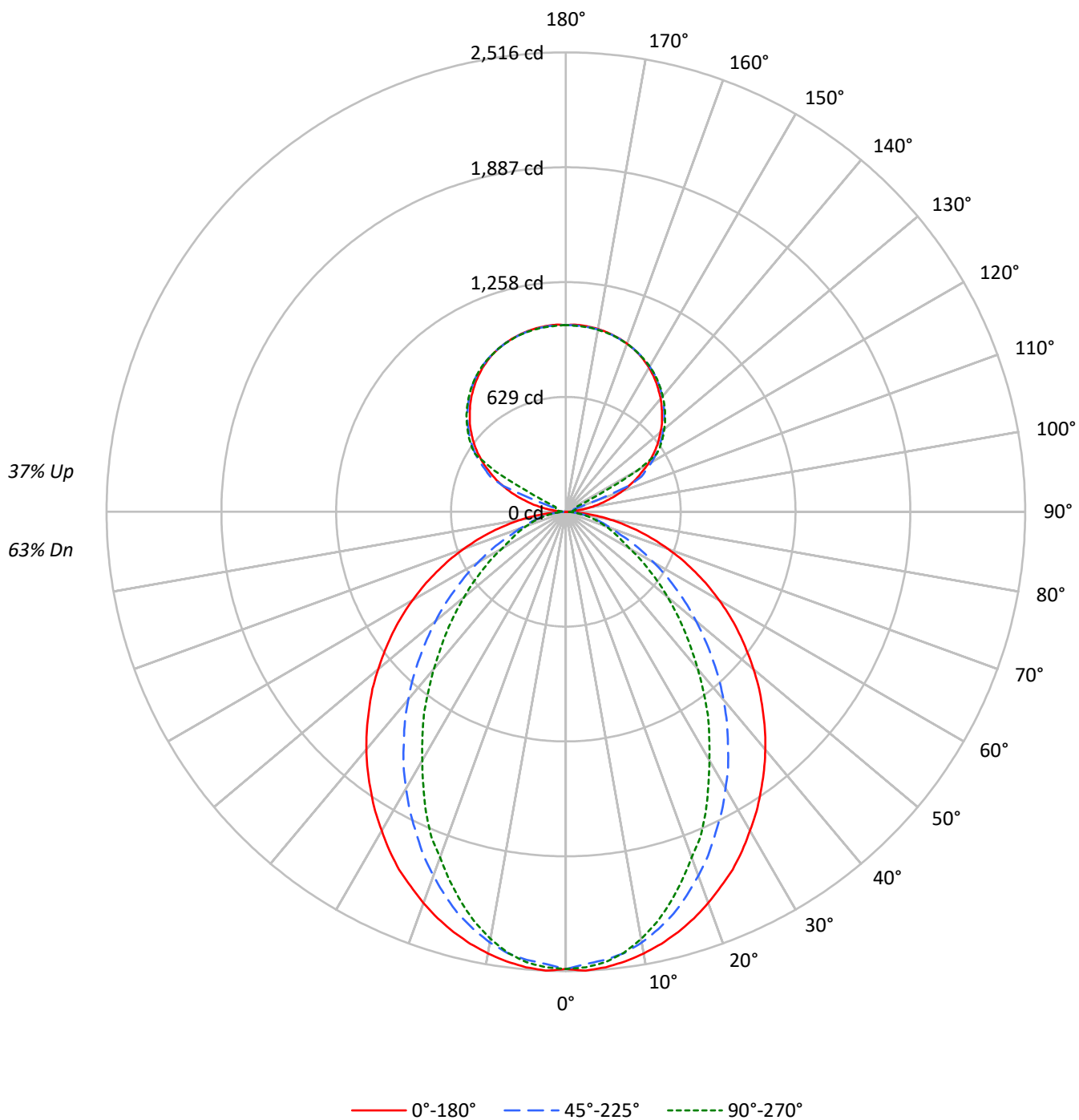
Lumens per Lamp: N/A
Luminaire Lumens: 8149.7 lumens
Efficiency: N/A
Efficacy: 101.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.96' x L: 3.11' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 80.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9821
Total Harmonic Distortion (THDi): 0.08
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	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68
1	101	97	93	90	95	91	88	85	80	78	76	71	69	67	61	60	59
2	93	86	80	75	87	81	75	71	71	67	64	63	60	57	55	52	51
3	85	76	69	63	80	72	65	60	63	58	54	56	52	49	49	46	44
4	78	68	60	54	73	64	57	52	57	51	47	50	46	43	44	41	38
5	72	61	53	47	67	57	50	45	51	45	41	46	41	37	40	37	34
6	67	55	47	41	62	52	45	39	46	41	36	41	37	33	37	33	30
7	62	50	42	36	58	47	40	35	42	36	32	38	33	30	34	30	27
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	24
9	54	42	34	29	51	40	33	28	36	30	26	32	27	24	29	25	22
10	50	38	31	26	47	37	30	25	33	28	24	30	25	22	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2927	2927	2927
5°	2930	2879	2898
10°	2900	2820	2803
15°	2858	2725	2656
20°	2803	2595	2476
25°	2748	2449	2302
30°	2673	2300	2082
35°	2600	2139	1889
40°	2526	1973	1668
45°	2439	1790	1468
50°	2350	1605	1272
55°	2257	1407	1084
60°	2148	1201	891
65°	2023	992	801
70°	1872	796	723
75°	1682	698	655
80°	1406	579	564
85°	955	376	416

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2439 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	234.7	2.9
10°-20°	644.3	7.9
20°-30°	904.6	11.1
30°-40°	986.1	12.1
40°-50°	906.3	11.1
50°-60°	711.7	8.7
60°-70°	463.3	5.7
70°-80°	238.5	2.9
80°-90°	62.7	0.8
90°-100°	33.7	0.4
100°-110°	125.7	1.5
110°-120°	333.3	4.1
120°-130°	552.9	6.8
130°-140°	587.3	7.2
140°-150°	545.8	6.7
150°-160°	438.8	5.4
160°-170°	282.8	3.5
170°-180°	97.3	1.2
0°-30°	1783.6	21.9
0°-40°	2769.6	34.0
0°-60°	4387.7	53.8
0°-90°	5152.1	63.2
90°-120°	492.7	6.0
90°-150°	2178.7	26.7
90°-180°	2998.0	36.8
0°-180°	8149.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2504	2504	2504	2504	2504	
5°	2504	2493	2463	2484	2477	237
15°	2382	2357	2280	2237	2214	671
25°	2162	2090	1940	1847	1813	994
35°	1863	1747	1548	1405	1355	1166
45°	1523	1371	1133	972	918	1176
55°	1158	981	736	601	558	1035
65°	782	598	394	317	310	775
75°	417	258	181	165	163	441
85°	97	50	43	43	43	112
90°	1	9	15	19	20	8
95°	48	24	29	33	32	57
105°	225	247	45	53	56	240
115°	425	438	456	114	61	419
125°	602	611	625	630	633	536
135°	744	756	763	770	769	575
145°	863	863	875	880	877	540
155°	951	944	953	957	952	438
165°	1002	997	1000	1005	1000	283
175°	1025	1020	1021	1026	1019	98
180°	1022	1022	1022	1022	1022	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2504.3	2504.3	2504.3	2504.3	2504.3
2.5°	2515.6	2504.3	2479.2	2502.0	2497.5
5°	2504.3	2493.0	2463.4	2483.9	2477.1
7.5°	2483.9	2470.3	2438.6	2447.5	2436.2
10°	2456.6	2440.7	2395.6	2388.6	2375.1
12.5°	2422.8	2402.3	2341.0	2327.5	2302.5
15°	2381.9	2356.8	2279.9	2236.9	2214.2
17.5°	2334.3	2297.9	2202.7	2152.9	2116.7
20°	2279.9	2234.4	2121.2	2064.7	2014.7
22.5°	2221.0	2168.8	2037.3	1960.4	1926.4
25°	2162.1	2089.5	1940.0	1847.1	1813.0
27.5°	2091.9	2014.7	1849.3	1742.7	1690.6
30°	2017.1	1930.8	1749.5	1634.1	1572.8
32.5°	1944.5	1840.2	1654.6	1518.4	1461.7
35°	1863.0	1747.4	1548.0	1405.1	1355.1
37.5°	1783.6	1658.8	1448.2	1291.7	1235.2
40°	1699.7	1563.9	1343.8	1183.0	1124.1
42.5°	1613.7	1468.6	1239.7	1071.9	1015.4
45°	1523.0	1371.0	1133.3	972.1	917.8
47.5°	1436.9	1276.1	1031.3	870.2	820.4
50°	1341.7	1180.8	931.5	775.0	727.6
52.5°	1248.6	1078.6	836.3	686.7	643.7
55°	1158.0	981.3	736.5	600.7	557.5
57.5°	1065.2	883.8	648.2	521.3	484.9
60°	970.0	788.7	555.2	439.8	403.4
62.5°	877.2	695.9	475.8	367.2	349.1
65°	781.9	598.2	394.4	317.4	310.4
67.5°	691.3	507.6	317.4	278.7	272.0
70°	596.0	419.3	262.8	240.2	231.1
72.5°	505.4	337.6	219.7	201.8	197.1
75°	417.0	258.2	181.3	165.4	163.3
77.5°	328.7	183.5	142.8	133.7	129.2
80°	246.9	131.5	108.7	99.8	99.8
82.5°	172.2	88.5	74.7	70.2	70.2
85°	97.4	49.8	43.0	43.0	43.0
87.5°	36.4	18.1	18.1	15.9	15.9
90°	0.7	8.9	14.7	18.6	19.9
92.5°	18.6	15.6	17.8	19.3	19.9
95°	48.1	23.6	28.8	32.6	31.8
97.5°	86.5	26.0	37.7	40.0	40.7
100°	131.0	29.6	42.2	48.1	49.6
102.5°	179.8	178.3	43.6	51.7	54.0
105°	224.9	247.1	45.1	53.2	56.2
107.5°	277.4	295.9	46.7	54.7	57.8
110°	327.8	343.3	129.5	55.5	58.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	375.2	388.4	375.9	57.0	59.2
115°	425.4	438.0	456.5	113.9	60.7
117.5°	469.1	483.8	496.4	390.6	196.8
120°	517.9	529.0	542.3	551.2	451.3
122.5°	559.3	571.2	586.0	590.4	591.2
125°	601.5	611.1	625.2	630.4	632.6
127.5°	640.0	650.3	661.5	668.8	669.5
130°	676.2	688.1	696.2	704.3	703.7
132.5°	713.2	722.9	730.9	737.6	736.9
135°	744.3	756.2	762.8	770.2	768.7
137.5°	776.8	785.7	793.1	800.5	798.3
140°	808.6	814.6	822.6	829.3	825.7
142.5°	835.4	840.5	850.1	856.0	852.3
145°	863.4	862.6	875.3	880.4	876.7
147.5°	887.8	885.6	898.2	901.8	898.9
150°	911.5	906.4	918.2	922.5	918.9
152.5°	931.4	925.5	936.7	941.1	935.9
155°	950.7	944.1	952.9	957.4	951.5
157.5°	966.2	960.4	967.0	972.2	966.2
160°	979.6	975.1	979.6	984.0	978.8
162.5°	991.4	986.9	990.7	995.8	989.2
165°	1001.7	997.3	999.6	1004.7	999.6
167.5°	1009.9	1005.4	1007.6	1012.9	1006.2
170°	1016.5	1012.1	1013.6	1018.8	1012.1
172.5°	1021.0	1016.5	1018.0	1023.2	1016.5
175°	1024.6	1019.5	1021.0	1026.1	1018.8
177.5°	1026.1	1021.0	1021.8	1026.9	1020.3
180°	1022.5	1022.5	1022.5	1022.5	1022.5

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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	11.99	12.94	12.83	13.80	14.87	7.96	8.91	8.80	9.77	10.84
	3H	13.67	14.52	14.53	15.39	16.49	9.15	10.00	10.01	10.87	11.97
	4H	14.28	15.09	15.15	15.96	17.07	9.60	10.40	10.47	11.28	12.39
	6H	14.71	15.44	15.59	16.33	17.45	9.92	10.66	10.81	11.55	12.67
	8H	14.83	15.54	15.72	16.44	17.56	10.02	10.72	10.91	11.62	12.74
	12H	14.90	15.57	15.79	16.46	17.61	10.06	10.73	10.96	11.62	12.77
4H	2H	12.02	12.83	12.90	13.70	14.81	8.57	9.37	9.44	10.24	11.35
	3H	13.86	14.52	14.74	15.43	16.56	9.92	10.59	10.81	11.49	12.62
	4H	14.55	15.16	15.45	16.06	17.21	10.47	11.07	11.37	11.98	13.13
	6H	15.06	15.59	15.98	16.51	17.67	10.89	11.41	11.80	12.34	13.49
	8H	15.24	15.73	16.15	16.65	17.81	11.01	11.50	11.93	12.42	13.59
	12H	15.34	15.77	16.27	16.72	17.89	11.08	11.52	12.02	12.46	13.63
8H	4H	14.52	15.01	15.44	15.93	17.10	10.75	11.24	11.67	12.16	13.33
	6H	15.09	15.49	16.03	16.45	17.62	11.27	11.67	12.21	12.63	13.80
	8H	15.30	15.66	16.25	16.61	17.80	11.45	11.81	12.41	12.77	13.95
	12H	15.44	15.75	16.39	16.70	17.93	11.57	11.89	12.53	12.83	14.07
12H	4H	14.48	14.92	15.42	15.86	17.03	10.76	11.20	11.70	12.14	13.31
	6H	15.06	15.42	16.01	16.37	17.56	11.32	11.67	12.27	12.63	13.81
	8H	15.28	15.60	16.24	16.55	17.78	11.53	11.84	12.48	12.79	14.02