

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: P908386

Luminaire Tested: DFN2DIP-PN2F0-060D020US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908386
REPORT IS A COMBINATION OF REPORTS P899470 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-060D020US840-RLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

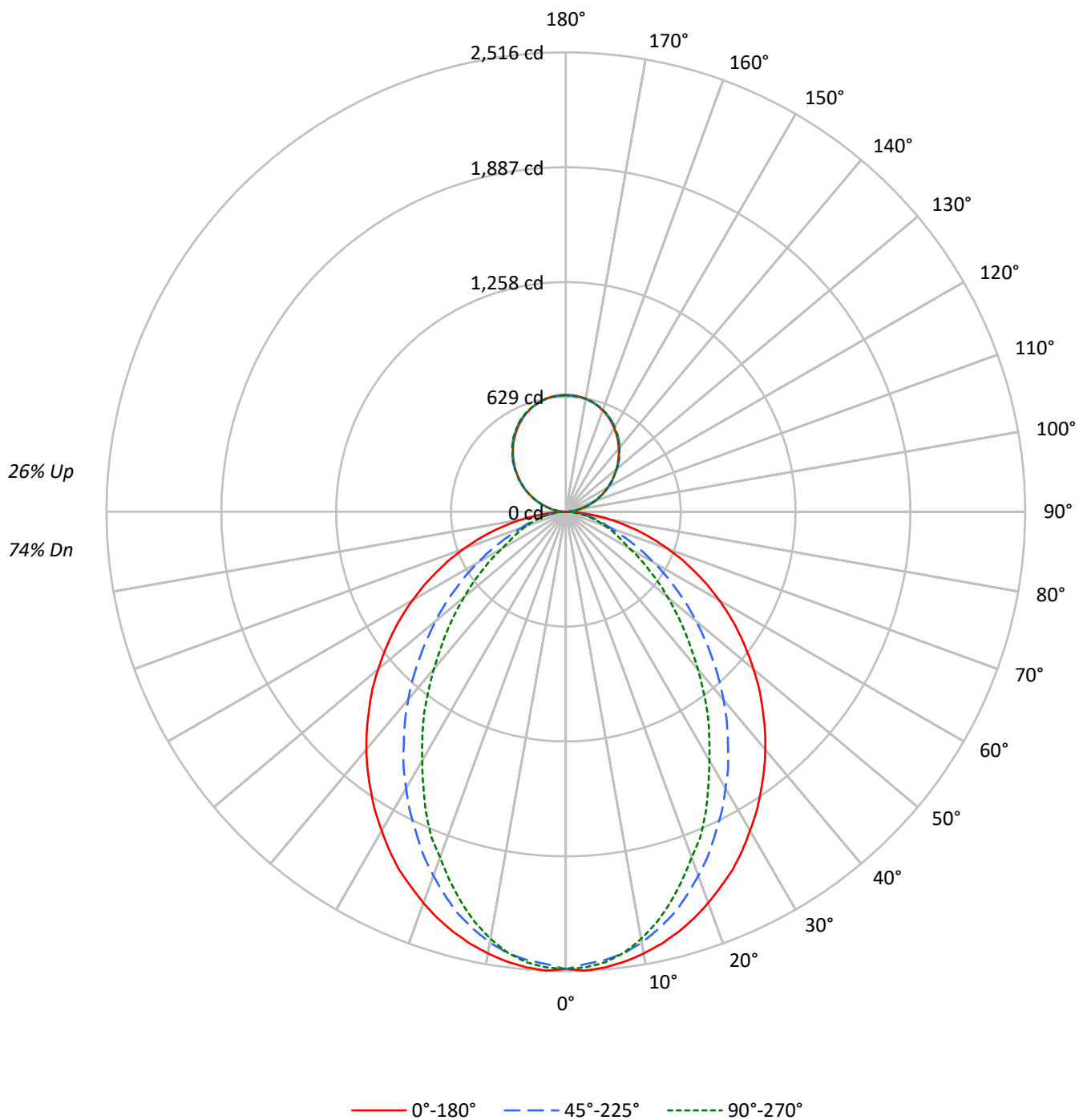
Lumens per Lamp: N/A
Luminaire Lumens: 6937.8 lumens
Efficiency: N/A
Efficacy: 86.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 80.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P908386

CATALOG NUMBER: DFN2DIP-PN2F0-060D020US840-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P908386

CATALOG NUMBER: DFN2DIP-PN2F0-060D020US840-RLLFLL

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	113	113	113	113	107	107	107	107	97	97	97	87	87	87	78	78	78
1	104	100	96	93	99	95	92	89	86	84	81	78	76	74	70	69	68
2	95	88	82	77	90	84	79	74	76	72	68	69	66	63	63	60	58
3	87	78	71	65	83	75	68	63	68	63	58	62	58	54	56	53	50
4	80	70	62	56	76	67	60	54	61	55	51	56	51	47	51	47	44
5	74	63	54	48	70	60	53	47	55	49	44	51	45	42	46	42	39
6	69	57	48	43	65	54	47	41	50	44	39	46	41	37	42	38	35
7	64	51	43	38	61	49	42	37	46	39	35	42	37	33	39	34	31
8	59	47	39	34	57	45	38	33	42	36	31	39	34	30	36	31	28
9	56	43	36	31	53	42	35	30	39	33	28	36	31	27	33	29	26
10	52	40	33	28	50	39	32	27	36	30	26	33	28	25	31	27	23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5424	5424	5424
5°	5424	5326	5364
10°	5361	5210	5181
15°	5279	5027	4904
20°	5173	4779	4567
25°	5064	4503	4242
30°	4920	4221	3832
35°	4779	3919	3471
40°	4635	3607	3060
45°	4469	3264	2688
50°	4297	2918	2324
55°	4116	2550	1975
60°	3906	2167	1618
65°	3663	1779	1448
70°	3369	1417	1299
75°	3000	1227	1166
80°	2467	997	987
85°	1614	619	700

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4469 cd/sqm

TEST NUMBER: P908386

CATALOG NUMBER: DFN2DIP-PN2F0-060D020US840-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	234.7	3.4
10°-20°	644.3	9.3
20°-30°	904.6	13.0
30°-40°	986.1	14.2
40°-50°	906.3	13.1
50°-60°	711.7	10.3
60°-70°	463.3	6.7
70°-80°	238.5	3.4
80°-90°	62.7	0.9
90°-100°	39.5	0.6
100°-110°	125.6	1.8
110°-120°	214.9	3.1
120°-130°	282.7	4.1
130°-140°	317.3	4.6
140°-150°	311.1	4.5
150°-160°	261.0	3.8
160°-170°	173.1	2.5
170°-180°	60.5	0.9
0°-30°	1783.6	25.7
0°-40°	2769.6	39.9
0°-60°	4387.7	63.2
0°-90°	5152.1	74.3
90°-120°	380.0	5.5
90°-150°	1291.1	18.6
90°-180°	1786.0	25.7
0°-180°	6937.8	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	7	19	18	18	7
95°	28	34	34	34	34	31
105°	116	117	119	120	120	122
115°	216	219	218	217	216	213
125°	314	318	317	315	315	280
135°	406	412	413	412	411	314
145°	493	496	500	500	498	308
155°	563	565	566	569	568	259
165°	613	612	612	616	613	173
175°	638	636	635	639	636	61
180°	639	639	639	639	639	

TEST NUMBER: P908386

CATALOG NUMBER: DFN2DIP-PN2F0-060D020US840-RLFL

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°	0.6	7.0	18.9	17.7	18.3
92.5°	11.9	16.2	16.8	17.4	17.4
95°	28.1	33.5	34.4	34.4	33.5
97.5°	46.8	51.8	53.9	53.9	53.9
100°	68.4	72.8	74.3	74.3	73.7
102.5°	91.1	94.3	96.4	97.0	96.4
105°	115.9	117.4	118.7	119.6	119.6
107.5°	140.6	142.9	142.9	143.3	140.6
110°	164.5	167.5	167.5	167.5	166.0



TEST NUMBER: P908386

CATALOG NUMBER: DFN2DIP-PN2F0-060D020US840-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	190.3	193.5	193.0	191.4	190.3
115°	215.7	218.7	217.8	217.2	215.7
117.5°	241.0	245.2	242.5	241.0	239.3
120°	266.3	270.5	266.3	266.3	264.6
122.5°	289.4	294.8	292.2	290.6	289.4
125°	313.7	318.5	317.0	315.3	314.7
127.5°	337.4	343.4	341.2	338.9	337.4
130°	359.5	366.5	365.5	364.4	362.2
132.5°	384.4	389.8	390.1	387.5	385.9
135°	405.8	411.7	412.8	412.3	410.7
137.5°	429.6	434.4	435.5	435.1	432.7
140°	450.6	455.4	458.2	458.2	456.1
142.5°	472.2	477.0	478.6	479.1	477.0
145°	492.6	496.4	499.6	500.1	498.0
147.5°	510.9	515.7	518.1	519.0	516.8
150°	529.8	533.0	535.1	536.8	535.1
152.5°	546.5	549.8	552.5	554.6	552.5
155°	563.3	564.8	566.5	569.3	567.5
157.5°	577.7	578.9	579.9	583.7	581.0
160°	590.7	591.8	592.4	595.6	593.3
162.5°	602.6	602.6	603.1	606.8	604.1
165°	612.8	612.2	612.2	616.0	613.4
167.5°	622.0	620.3	620.3	624.1	621.5
170°	628.9	627.4	626.8	630.7	627.4
172.5°	633.8	632.2	631.7	635.5	632.2
175°	637.6	636.1	634.9	638.7	635.5
177.5°	639.7	638.2	637.0	640.3	637.0
180°	638.7	638.7	638.7	638.7	638.7

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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	14.92	16.00	15.65	16.74	17.62	10.89	11.97	11.62	12.71	13.59
	3H	16.60	17.56	17.34	18.31	19.23	12.08	13.05	12.82	13.80	14.71
	4H	17.21	18.11	17.96	18.87	19.80	12.53	13.44	13.29	14.20	15.12
	6H	17.62	18.46	18.39	19.23	20.17	12.85	13.69	13.62	14.46	15.39
	8H	17.75	18.54	18.53	19.33	20.27	12.94	13.74	13.72	14.52	15.46
	12H	17.81	18.57	18.59	19.35	20.31	12.98	13.74	13.77	14.52	15.49
4H	2H	14.97	15.88	15.73	16.63	17.56	11.51	12.41	12.27	13.17	14.10
	3H	16.80	17.55	17.57	18.34	19.28	12.86	13.61	13.63	14.41	15.35
	4H	17.48	18.17	18.27	18.96	19.93	13.40	14.09	14.19	14.88	15.85
	6H	17.99	18.58	18.79	19.40	20.38	13.82	14.41	14.62	15.23	16.20
	8H	18.16	18.71	18.97	19.53	20.51	13.94	14.49	14.75	15.31	16.29
	12H	18.25	18.75	19.08	19.59	20.58	14.01	14.50	14.83	15.34	16.33
8H	4H	17.46	18.01	18.27	18.83	19.82	13.69	14.24	14.50	15.05	16.04
	6H	18.02	18.47	18.85	19.33	20.32	14.19	14.65	15.03	15.51	16.49
	8H	18.22	18.62	19.07	19.48	20.49	14.37	14.78	15.22	15.63	16.64
	12H	18.35	18.71	19.20	19.56	20.62	14.49	14.84	15.34	15.69	16.75
12H	4H	17.43	17.92	18.25	18.76	19.75	13.70	14.20	14.53	15.03	16.03
	6H	17.99	18.40	18.84	19.25	20.26	14.24	14.64	15.08	15.50	16.50
	8H	18.21	18.56	19.06	19.41	20.47	14.44	14.80	15.29	15.64	16.71