

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: P905663

Luminaire Tested: DFN2DIP-PN2F0-060D030US835-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905663
REPORT IS A COMBINATION OF REPORTS P901000 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-060D030US835-RLLONL
Description: 2 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

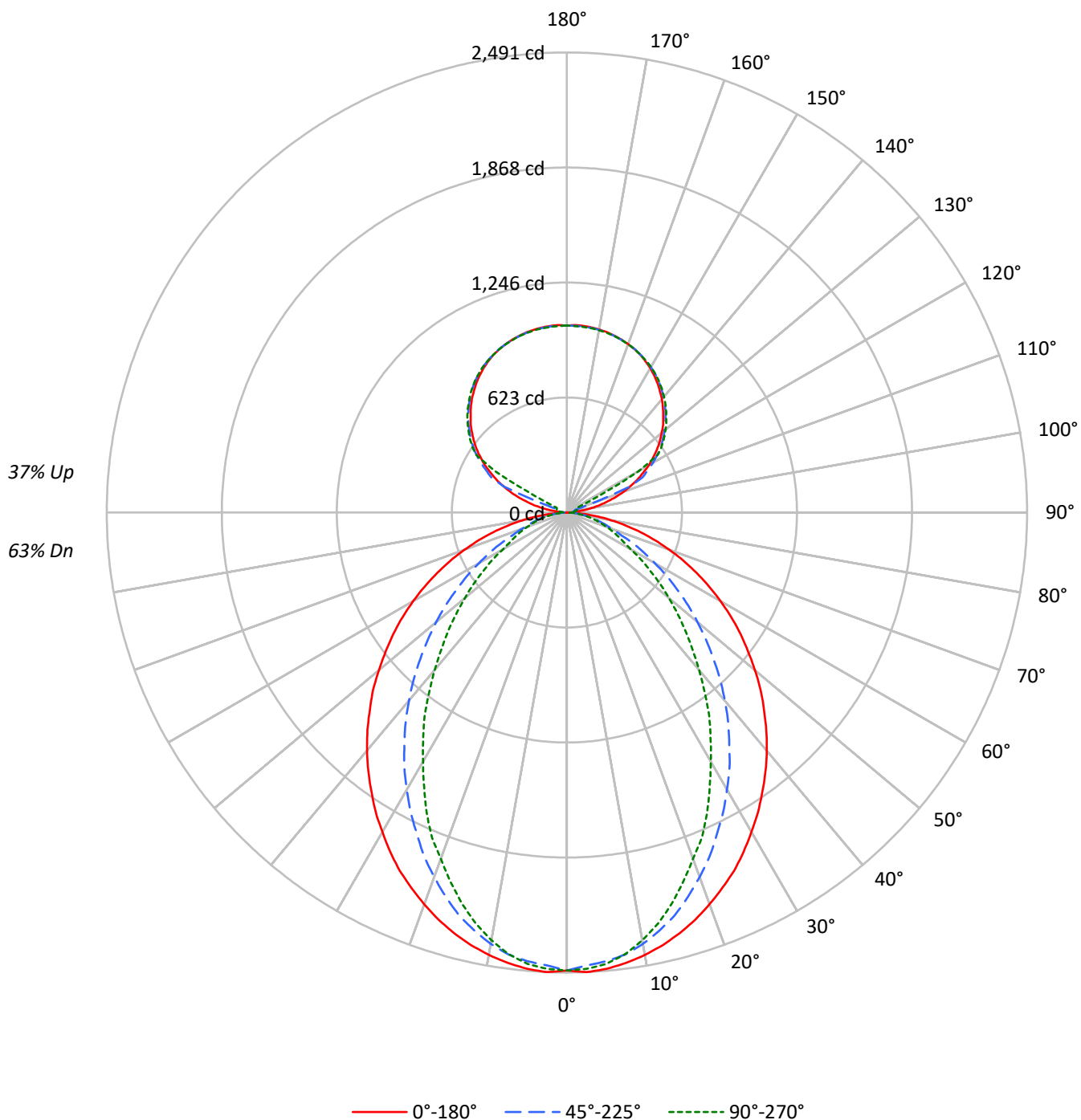
Lumens per Lamp: N/A
Luminaire Lumens: 8070.0 lumens
Efficiency: N/A
Efficacy: 96.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 83.5
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: P905663

CATALOG NUMBER: DFN2DIP-PN2F0-060D030US835-RLLONL

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°	5371	5371	5371
5°	5371	5274	5312
10°	5309	5159	5131
15°	5227	4978	4857
20°	5122	4732	4523
25°	5014	4459	4200
30°	4872	4179	3794
35°	4733	3881	3437
40°	4590	3572	3030
45°	4426	3232	2661
50°	4255	2890	2302
55°	4075	2525	1956
60°	3868	2146	1603
65°	3628	1762	1434
70°	3336	1403	1286
75°	2970	1214	1155
80°	2443	987	977
85°	1597	614	694

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4426 cd/sqm

TEST NUMBER: P905663

CATALOG NUMBER: DFN2DIP-PN2F0-060D030US835-RLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	232.4	2.9
10°-20°	638.0	7.9
20°-30°	895.7	11.1
30°-40°	976.4	12.1
40°-50°	897.4	11.1
50°-60°	704.8	8.7
60°-70°	458.8	5.7
70°-80°	236.1	2.9
80°-90°	62.1	0.8
90°-100°	33.4	0.4
100°-110°	124.4	1.5
110°-120°	330.1	4.1
120°-130°	547.5	6.8
130°-140°	581.5	7.2
140°-150°	540.5	6.7
150°-160°	434.5	5.4
160°-170°	280.0	3.5
170°-180°	96.4	1.2
0°-30°	1766.2	21.9
0°-40°	2742.6	34.0
0°-60°	4344.8	53.8
0°-90°	5101.8	63.2
90°-120°	487.9	6.0
90°-150°	2157.3	26.7
90°-180°	2968.0	36.8
0°-180°	8070.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2480	2480	2480	2480	2480	
5°	2480	2469	2439	2460	2453	235
15°	2359	2334	2258	2215	2193	665
25°	2141	2069	1921	1829	1795	985
35°	1845	1730	1533	1391	1342	1155
45°	1508	1358	1122	963	909	1165
55°	1147	972	729	595	552	1025
65°	774	592	390	314	307	768
75°	413	256	180	164	162	437
85°	96	49	43	43	43	111
90°	1	9	15	18	20	8
95°	48	23	28	32	32	56
105°	223	245	45	53	56	238
115°	421	434	452	113	60	415
125°	596	605	619	624	626	531
135°	737	749	755	763	761	569
145°	855	854	867	872	868	535
155°	941	935	944	948	942	434
165°	992	988	990	995	990	280
175°	1015	1010	1011	1016	1009	97
180°	1012	1012	1012	1012	1012	

TEST NUMBER: P905663

CATALOG NUMBER: DFN2DIP-PN2F0-060D030US835-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2479.8	2479.8	2479.8	2479.8	2479.8
2.5°	2491.0	2479.8	2455.0	2477.6	2473.1
5°	2479.8	2468.6	2439.3	2459.6	2452.9
7.5°	2459.6	2446.2	2414.8	2423.6	2412.4
10°	2432.6	2416.9	2372.2	2365.3	2351.9
12.5°	2399.1	2378.8	2318.1	2304.8	2280.0
15°	2358.6	2333.8	2257.6	2215.0	2192.6
17.5°	2311.5	2275.5	2181.2	2131.9	2096.0
20°	2257.6	2212.6	2100.5	2044.5	1995.0
22.5°	2199.3	2147.6	2017.4	1941.2	1907.6
25°	2141.0	2069.1	1921.0	1829.1	1795.3
27.5°	2071.5	1995.0	1831.2	1725.7	1674.1
30°	1997.4	1911.9	1732.4	1618.1	1557.4
32.5°	1925.5	1822.2	1638.4	1503.6	1447.4
35°	1844.8	1730.3	1532.9	1391.4	1341.9
37.5°	1766.2	1642.6	1434.1	1279.1	1223.1
40°	1683.1	1548.6	1330.7	1171.4	1113.1
42.5°	1597.9	1454.3	1227.6	1061.4	1005.5
45°	1508.1	1357.6	1122.2	962.6	908.8
47.5°	1422.9	1263.6	1021.2	861.7	812.4
50°	1328.6	1169.3	922.4	767.4	720.5
52.5°	1236.4	1068.1	828.1	680.0	637.4
55°	1146.7	971.7	729.3	594.8	552.1
57.5°	1054.8	875.2	641.9	516.2	480.2
60°	960.5	781.0	549.8	435.5	399.5
62.5°	868.6	689.1	471.2	363.6	345.7
65°	774.3	592.4	390.5	314.3	307.4
67.5°	684.5	502.6	314.3	276.0	269.3
70°	590.2	415.2	260.2	237.9	228.8
72.5°	500.5	334.3	217.6	199.8	195.2
75°	412.9	255.7	179.5	163.8	161.7
77.5°	325.5	181.7	141.4	132.4	127.9
80°	244.5	130.2	107.6	98.8	98.8
82.5°	170.5	87.6	74.0	69.5	69.5
85°	96.4	49.3	42.6	42.6	42.6
87.5°	36.0	17.9	17.9	15.7	15.7
90°	0.7	8.8	14.6	18.4	19.7
92.5°	18.4	15.4	17.6	19.1	19.7
95°	47.6	23.4	28.5	32.3	31.5
97.5°	85.7	25.7	37.3	39.6	40.3
100°	129.7	29.3	41.8	47.6	49.1
102.5°	178.0	176.6	43.2	51.2	53.5
105°	222.7	244.7	44.7	52.7	55.7
107.5°	274.7	293.0	46.2	54.2	57.2
110°	324.6	339.9	128.2	55.0	57.9

TEST NUMBER: P905663

CATALOG NUMBER: DFN2DIP-PN2F0-060D030US835-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	371.5	384.6	372.2	56.4	58.6
115°	421.2	433.7	452.0	112.8	60.1
117.5°	464.5	479.1	491.6	386.8	194.9
120°	512.8	523.8	537.0	545.8	446.9
122.5°	553.8	565.6	580.3	584.6	585.4
125°	595.6	605.1	619.1	624.2	626.4
127.5°	633.7	643.9	655.0	662.3	663.0
130°	669.6	681.4	689.4	697.4	696.8
132.5°	706.2	715.8	723.8	730.4	729.7
135°	737.0	748.8	755.3	762.7	761.2
137.5°	769.2	778.0	785.4	792.7	790.5
140°	800.7	806.6	814.6	821.2	817.6
142.5°	827.2	832.3	841.8	847.6	844.0
145°	855.0	854.2	866.7	871.8	868.1
147.5°	879.1	876.9	889.4	893.0	890.1
150°	902.6	897.5	909.2	913.5	909.9
152.5°	922.3	916.5	927.5	931.9	926.8
155°	941.4	934.9	943.6	948.0	942.2
157.5°	956.8	951.0	957.6	962.7	956.8
160°	970.0	965.6	970.0	974.4	969.2
162.5°	981.7	977.3	981.0	986.1	979.5
165°	991.9	987.6	989.8	994.9	989.8
167.5°	1000.0	995.6	997.8	1003.0	996.4
170°	1006.6	1002.2	1003.7	1008.8	1002.2
172.5°	1011.0	1006.6	1008.1	1013.2	1006.6
175°	1014.6	1009.5	1011.0	1016.1	1008.8
177.5°	1016.1	1011.0	1011.8	1016.9	1010.3
180°	1012.5	1012.5	1012.5	1012.5	1012.5

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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	14.02	14.97	14.87	15.83	16.90	9.99	10.94	10.83	11.80	12.87
	3H	15.69	16.54	16.54	17.41	18.51	11.17	12.02	12.03	12.89	13.99
	4H	16.29	17.09	17.16	17.97	19.08	11.62	12.42	12.49	13.29	14.40
	6H	16.70	17.44	17.58	18.32	19.44	11.93	12.67	12.81	13.55	14.67
	8H	16.82	17.52	17.71	18.42	19.55	12.01	12.72	12.91	13.62	14.74
	12H	16.88	17.55	17.78	18.44	19.59	12.05	12.72	12.95	13.62	14.76
4H	2H	14.05	14.85	14.93	15.73	16.84	10.59	11.39	11.47	12.27	13.38
	3H	15.87	16.53	16.76	17.44	18.57	11.93	12.60	12.82	13.51	14.63
	4H	16.55	17.16	17.45	18.06	19.21	12.47	13.08	13.37	13.98	15.13
	6H	17.05	17.57	17.96	18.50	19.66	12.88	13.40	13.79	14.33	15.48
	8H	17.22	17.71	18.13	18.63	19.79	13.00	13.49	13.91	14.41	15.57
	12H	17.31	17.75	18.24	18.69	19.86	13.06	13.50	13.99	14.44	15.61
8H	4H	16.52	17.01	17.44	17.93	19.10	12.75	13.23	13.66	14.16	15.32
	6H	17.07	17.47	18.01	18.44	19.60	13.25	13.65	14.19	14.61	15.78
	8H	17.27	17.63	18.23	18.58	19.77	13.42	13.78	14.38	14.74	15.92
	12H	17.40	17.72	18.36	18.66	19.90	13.53	13.85	14.49	14.80	16.03
12H	4H	16.48	16.92	17.41	17.86	19.03	12.75	13.19	13.69	14.13	15.30
	6H	17.04	17.40	18.00	18.36	19.54	13.29	13.65	14.24	14.60	15.79
	8H	17.26	17.57	18.21	18.52	19.75	13.49	13.80	14.44	14.75	15.99