

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: P919578

Luminaire Tested: DFN2DIP-PN4F0-050D110US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919578
REPORT IS A COMBINATION OF REPORTS P899738 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-050D110US935-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

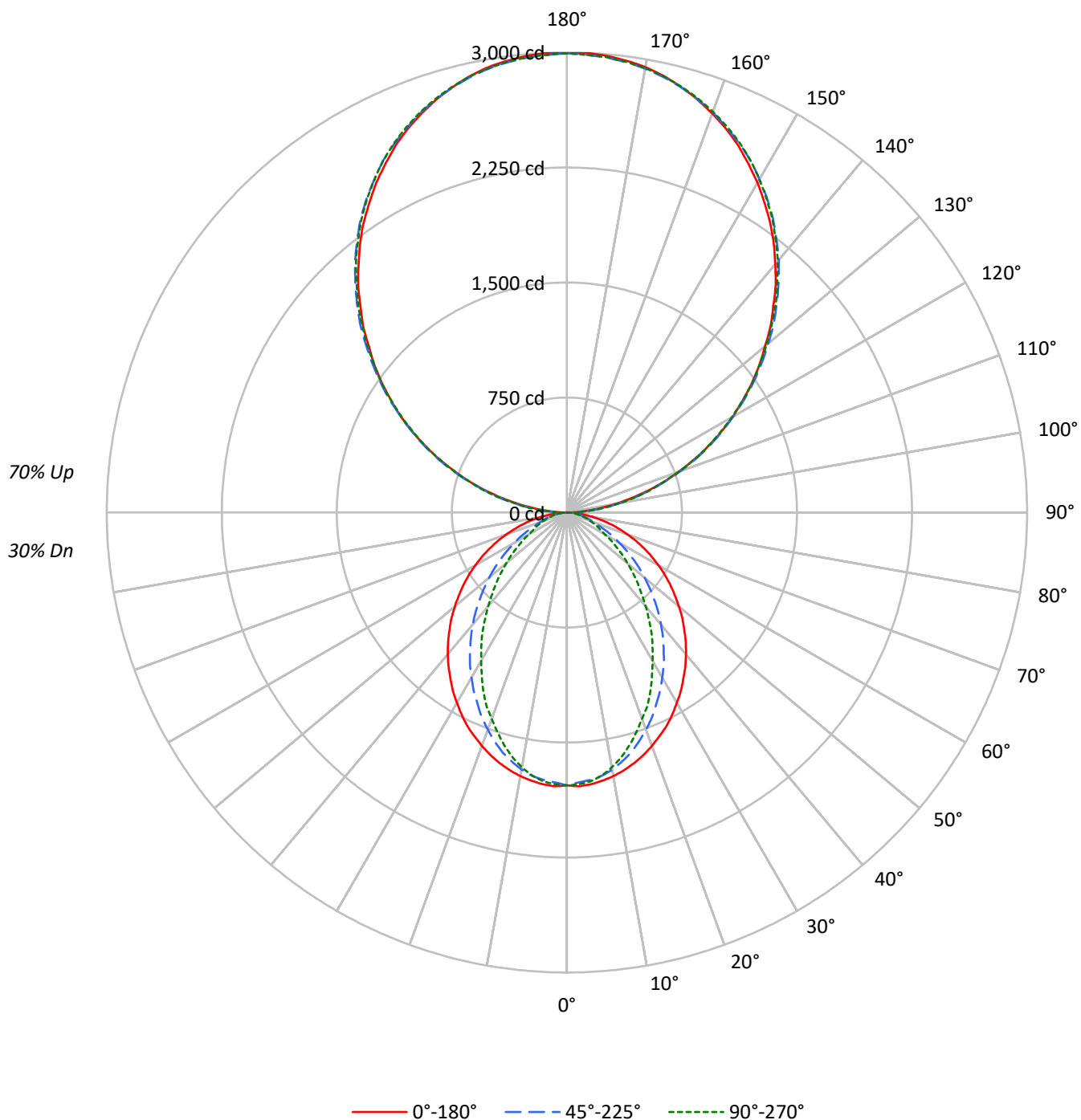
Lumens per Lamp: N/A
Luminaire Lumens: 12041.1 lumens
Efficiency: N/A
Efficacy: 88.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 135.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P919578

CATALOG NUMBER: DFN2DIP-PN4F0-050D110US935-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P919578

CATALOG NUMBER: DFN2DIP-PN4F0-050D110US935-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	102	102	102	102	92	92	92	92	72	72	72	55	55	55	38	38	38
1	94	90	86	83	84	81	78	75	64	62	60	48	47	46	34	33	33
2	86	79	73	68	77	71	66	62	56	53	50	43	41	39	30	29	28
3	78	69	62	57	70	62	57	52	50	46	42	38	35	33	27	26	24
4	72	61	54	48	64	55	49	44	44	40	36	34	31	29	24	23	21
5	66	55	47	41	59	50	43	38	40	35	31	31	27	25	22	20	18
6	60	49	41	36	54	44	38	33	36	31	27	28	24	22	20	18	16
7	56	44	37	31	50	40	34	29	32	28	24	25	22	19	18	16	15
8	52	40	33	28	47	36	30	26	30	25	21	23	20	17	17	15	13
9	48	37	29	25	43	33	27	23	27	22	19	21	18	16	16	14	12
10	45	33	27	22	40	31	24	20	25	20	17	20	16	14	15	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1299	1299	1299
5°	1301	1278	1287
10°	1288	1253	1245
15°	1270	1212	1180
20°	1247	1155	1101
25°	1223	1091	1025
30°	1190	1026	928
35°	1159	955	842
40°	1127	883	744
45°	1089	802	656
50°	1051	720	569
55°	1010	633	486
60°	964	541	400
65°	910	449	360
70°	845	362	326
75°	763	319	298
80°	645	268	259
85°	449	180	196

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2346 cd/sqm

TEST NUMBER: P919578

CATALOG NUMBER: DFN2DIP-PN4F0-050D110US935-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	166.8	1.4
10°-20°	457.8	3.8
20°-30°	642.7	5.3
30°-40°	700.6	5.8
40°-50°	643.9	5.3
50°-60°	505.7	4.2
60°-70°	329.2	2.7
70°-80°	169.5	1.4
80°-90°	51.8	0.4
90°-100°	185.3	1.5
100°-110°	588.9	4.9
110°-120°	1007.8	8.4
120°-130°	1325.4	11.0
130°-140°	1487.7	12.4
140°-150°	1458.9	12.1
150°-160°	1223.8	10.2
160°-170°	811.6	6.7
170°-180°	283.7	2.4
0°-30°	1267.2	10.5
0°-40°	1967.8	16.3
0°-60°	3117.4	25.9
0°-90°	3667.8	30.5
90°-120°	1782.1	14.8
90°-150°	6054.2	50.3
90°-180°	8373.0	69.5
0°-180°	12041.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1779	1779	1779	1779	1779	
5°	1779	1771	1750	1765	1760	169
15°	1692	1675	1620	1589	1573	477
25°	1536	1484	1378	1312	1288	706
35°	1324	1242	1100	998	963	828
45°	1082	974	805	691	652	836
55°	823	697	523	427	396	735
65°	556	425	280	226	221	551
75°	296	184	129	118	116	313
85°	69	35	31	31	31	79
90°	3	32	88	83	86	12
95°	132	157	162	162	157	147
105°	544	551	556	561	561	574
115°	1011	1026	1021	1019	1011	1000
125°	1471	1494	1486	1478	1476	1315
135°	1903	1931	1936	1933	1926	1471
145°	2310	2328	2342	2345	2335	1443
155°	2641	2648	2657	2669	2661	1216
165°	2873	2871	2871	2889	2876	811
175°	2990	2983	2977	2995	2980	284
180°	2995	2995	2995	2995	2995	

TEST NUMBER: P919578

CATALOG NUMBER: DFN2DIP-PN4F0-050D110US935-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1779.3	1779.3	1779.3	1779.3	1779.3
2.5°	1787.3	1779.3	1761.5	1777.7	1774.4
5°	1779.3	1771.2	1750.2	1764.7	1760.0
7.5°	1764.7	1755.1	1732.6	1739.0	1730.9
10°	1745.4	1734.1	1702.0	1697.1	1687.5
12.5°	1721.3	1706.8	1663.3	1653.7	1635.9
15°	1692.3	1674.6	1619.9	1589.3	1573.2
17.5°	1658.5	1632.7	1565.0	1529.6	1503.8
20°	1619.9	1587.6	1507.1	1467.0	1431.4
22.5°	1578.0	1540.9	1447.5	1392.8	1368.7
25°	1536.1	1484.5	1378.3	1312.3	1288.1
27.5°	1486.3	1431.4	1313.9	1238.2	1201.2
30°	1433.1	1371.8	1243.0	1161.0	1117.4
32.5°	1381.6	1307.4	1175.5	1078.8	1038.5
35°	1323.6	1241.5	1099.8	998.3	962.9
37.5°	1267.2	1178.6	1029.0	917.7	877.6
40°	1207.6	1111.1	954.8	840.5	798.7
42.5°	1146.5	1043.4	880.8	761.6	721.4
45°	1082.1	974.1	805.1	690.7	652.0
47.5°	1020.9	906.6	732.7	618.3	582.9
50°	953.3	839.0	661.8	550.6	516.9
52.5°	887.2	766.4	594.2	487.9	457.4
55°	822.8	697.1	523.2	426.7	396.1
57.5°	756.8	628.0	460.5	370.4	344.6
60°	689.1	560.3	394.4	312.5	286.6
62.5°	623.2	494.4	338.1	260.9	248.1
65°	555.5	425.1	280.2	225.5	220.6
67.5°	491.1	360.7	225.5	198.0	193.2
70°	423.5	297.9	186.8	170.6	164.2
72.5°	359.1	239.9	156.2	143.4	140.1
75°	296.3	183.5	128.8	117.5	116.0
77.5°	233.5	130.4	101.5	95.0	91.7
80°	175.5	93.4	77.2	70.9	70.9
82.5°	122.3	62.9	53.1	49.9	49.9
85°	69.2	35.4	30.6	30.6	30.6
87.5°	25.8	12.8	12.8	11.3	11.3
90°	2.7	32.5	88.5	83.1	85.8
92.5°	56.0	75.9	78.5	81.3	81.3
95°	131.8	157.1	161.6	161.6	157.1
97.5°	219.5	242.9	252.9	252.9	252.9
100°	320.5	341.3	348.5	348.5	345.9
102.5°	427.1	442.5	452.5	455.1	452.5
105°	543.6	550.9	556.3	560.8	560.8
107.5°	659.2	670.0	670.0	671.8	659.2
110°	771.2	785.7	785.7	785.7	778.4

TEST NUMBER: P919578

CATALOG NUMBER: DFN2DIP-PN4F0-050D110US935-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	892.2	907.5	904.8	897.6	892.2
115°	1011.4	1025.8	1021.3	1018.6	1011.4
117.5°	1129.7	1149.5	1136.9	1129.7	1122.5
120°	1248.9	1268.8	1248.9	1248.9	1240.8
122.5°	1357.3	1382.5	1369.8	1362.6	1357.3
125°	1471.0	1493.6	1486.3	1478.2	1475.5
127.5°	1582.1	1610.1	1600.2	1589.3	1582.1
130°	1685.9	1718.5	1713.9	1708.5	1698.6
132.5°	1802.4	1827.7	1829.5	1816.9	1809.6
135°	1902.6	1930.6	1936.0	1933.4	1926.1
137.5°	2014.6	2037.2	2041.7	2039.9	2029.1
140°	2113.1	2135.6	2148.3	2148.3	2138.4
142.5°	2214.2	2236.8	2244.0	2246.7	2236.8
145°	2309.9	2328.0	2342.4	2345.1	2335.2
147.5°	2395.7	2418.3	2429.1	2433.6	2423.7
150°	2484.2	2499.6	2509.5	2517.6	2509.5
152.5°	2562.8	2578.1	2590.7	2600.7	2590.7
155°	2641.4	2648.5	2656.7	2669.4	2661.2
157.5°	2709.0	2714.5	2718.9	2737.0	2724.4
160°	2769.6	2775.0	2777.7	2793.1	2782.2
162.5°	2825.5	2825.5	2828.3	2845.4	2832.8
165°	2873.4	2870.7	2870.7	2888.7	2876.1
167.5°	2916.7	2908.6	2908.6	2926.7	2914.0
170°	2949.3	2942.0	2939.4	2957.4	2942.0
172.5°	2971.8	2964.6	2961.9	2980.0	2964.6
175°	2989.9	2982.7	2977.2	2995.3	2980.0
177.5°	2999.8	2992.6	2987.1	3002.6	2987.1
180°	2995.3	2995.3	2995.3	2995.3	2995.3

TEST NUMBER: P919578

CATALOG NUMBER: DFN2DIP-PN4F0-050D110US935-RLFL

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	5.89	6.58	7.00	7.69	9.22	1.86	2.55	2.97	3.65	5.18
	3H	7.56	8.18	8.68	9.29	10.84	3.03	3.65	4.16	4.77	6.31
	4H	8.16	8.75	9.30	9.87	11.42	3.48	4.07	4.61	5.18	6.73
	6H	8.58	9.12	9.72	10.24	11.80	3.79	4.33	4.93	5.45	7.01
	8H	8.70	9.22	9.85	10.35	11.90	3.88	4.39	5.02	5.53	7.08
	12H	8.76	9.25	9.91	10.38	11.95	3.92	4.41	5.07	5.53	7.11
4H	2H	5.89	6.48	7.03	7.59	9.14	2.44	3.02	3.57	4.14	5.69
	3H	7.71	8.20	8.85	9.34	10.90	3.77	4.26	4.92	5.40	6.96
	4H	8.40	8.85	9.55	9.98	11.56	4.32	4.77	5.46	5.90	7.48
	6H	8.91	9.29	10.06	10.45	12.02	4.73	5.11	5.88	6.27	7.84
	8H	9.08	9.44	10.24	10.59	12.18	4.86	5.22	6.01	6.36	7.95
	12H	9.17	9.50	10.34	10.66	12.25	4.92	5.24	6.08	6.40	7.99
8H	4H	8.36	8.72	9.51	9.86	11.45	4.59	4.95	5.74	6.09	7.68
	6H	8.92	9.22	10.09	10.40	11.99	5.10	5.40	6.28	6.59	8.17
	8H	9.14	9.40	10.32	10.56	12.17	5.29	5.55	6.47	6.72	8.32
	12H	9.27	9.50	10.46	10.66	12.30	5.41	5.64	6.59	6.80	8.44
12H	4H	8.30	8.63	9.47	9.78	11.38	4.59	4.91	5.76	6.07	7.66
	6H	8.90	9.16	10.07	10.32	11.93	5.15	5.41	6.33	6.58	8.18
	8H	9.11	9.34	10.29	10.50	12.14	5.36	5.59	6.54	6.75	8.39

END OF REPORT