

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: P919610

Luminaire Tested: DFN2DIP-PN4F0-060D100US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919610
REPORT IS A COMBINATION OF REPORTS P899722 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-060D100US935-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

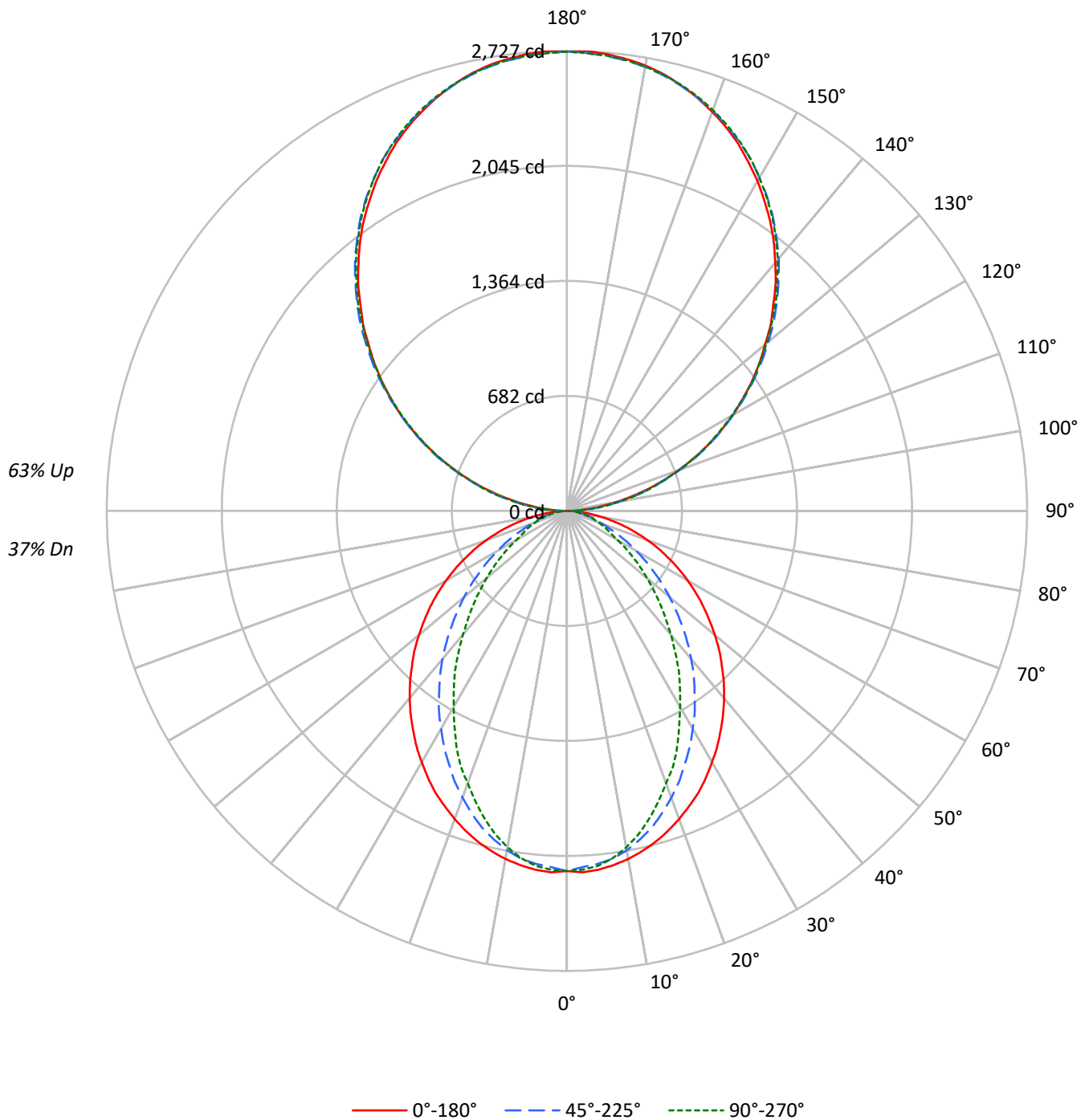
Lumens per Lamp: N/A
Luminaire Lumens: 12010.9 lumens
Efficiency: N/A
Efficacy: 92.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 129.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P919610

CATALOG NUMBER: DFN2DIP-PN4F0-060D100US935-RLLFLL

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	76	76	76	59	59	59	44	44	44
1	95	91	87	84	86	83	80	77	67	65	63	53	51	50	39	38	38
2	87	80	74	69	79	73	68	63	59	56	53	47	44	42	35	34	32
3	79	70	64	58	72	64	58	53	52	48	45	41	39	36	31	29	28
4	73	63	55	49	66	57	51	46	47	42	38	37	34	31	28	26	24
5	67	56	48	42	60	51	44	39	42	37	33	33	30	27	26	23	21
6	62	50	42	37	56	46	39	34	38	33	29	30	27	24	23	21	19
7	57	45	38	32	52	41	35	30	34	29	26	28	24	21	21	19	17
8	53	41	34	29	48	38	31	27	31	26	23	25	22	19	20	17	15
9	49	38	30	25	45	34	28	24	29	24	20	23	20	17	18	16	14
10	46	34	27	23	42	32	25	21	26	22	18	22	18	16	17	14	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1559	1559	1559
5°	1561	1534	1544
10°	1546	1504	1494
15°	1524	1455	1416
20°	1496	1386	1321
25°	1467	1310	1230
30°	1429	1231	1113
35°	1391	1147	1011
40°	1352	1059	893
45°	1307	962	787
50°	1261	864	683
55°	1213	759	583
60°	1156	650	480
65°	1092	538	432
70°	1014	434	392
75°	916	383	357
80°	773	322	311
85°	539	216	235

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2132 cd/sqm

TEST NUMBER: P919610

CATALOG NUMBER: DFN2DIP-PN4F0-060D100US935-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	200.1	1.7
10°-20°	549.3	4.6
20°-30°	771.2	6.4
30°-40°	840.7	7.0
40°-50°	772.7	6.4
50°-60°	606.8	5.1
60°-70°	395.0	3.3
70°-80°	203.3	1.7
80°-90°	59.6	0.5
90°-100°	168.5	1.4
100°-110°	535.4	4.5
110°-120°	916.2	7.6
120°-130°	1204.9	10.0
130°-140°	1352.5	11.3
140°-150°	1326.3	11.0
150°-160°	1112.6	9.3
160°-170°	737.8	6.1
170°-180°	257.9	2.1
0°-30°	1520.7	12.7
0°-40°	2361.4	19.7
0°-60°	3740.9	31.1
0°-90°	4398.8	36.6
90°-120°	1620.1	13.5
90°-150°	5503.8	45.8
90°-180°	7612.0	63.4
0°-180°	12010.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2135	2135	2135	2135	2135	
5°	2135	2126	2100	2118	2112	202
15°	2031	2009	1944	1907	1888	572
25°	1843	1782	1654	1575	1546	848
35°	1588	1490	1320	1198	1155	994
45°	1298	1169	966	829	782	1003
55°	987	837	628	512	475	882
65°	667	510	336	271	265	661
75°	356	220	154	141	139	376
85°	83	42	37	37	37	95
90°	2	30	80	76	78	12
95°	120	143	147	147	143	133
105°	494	501	506	510	510	522
115°	920	932	928	926	920	909
125°	1337	1358	1351	1344	1341	1195
135°	1730	1755	1760	1758	1751	1337
145°	2100	2116	2130	2132	2123	1312
155°	2401	2408	2415	2427	2419	1105
165°	2612	2610	2610	2626	2615	737
175°	2718	2712	2707	2723	2709	258
180°	2723	2723	2723	2723	2723	

TEST NUMBER: P919610

CATALOG NUMBER: DFN2DIP-PN4F0-060D100US935-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2135.1	2135.1	2135.1	2135.1	2135.1
2.5°	2144.7	2135.1	2113.7	2133.2	2129.3
5°	2135.1	2125.5	2100.2	2117.7	2111.9
7.5°	2117.7	2106.2	2079.1	2086.7	2077.1
10°	2094.5	2080.9	2042.5	2036.5	2025.0
12.5°	2065.6	2048.1	1995.9	1984.4	1963.1
15°	2030.7	2009.4	1943.8	1907.1	1887.8
17.5°	1990.2	1959.2	1878.0	1835.6	1804.7
20°	1943.8	1905.0	1808.5	1760.3	1717.7
22.5°	1893.6	1849.1	1737.0	1671.4	1642.4
25°	1843.4	1781.5	1654.0	1574.9	1545.7
27.5°	1783.6	1717.7	1576.7	1485.8	1441.4
30°	1719.8	1646.1	1491.6	1393.2	1340.9
32.5°	1657.9	1568.9	1410.7	1294.6	1246.2
35°	1588.4	1489.8	1319.8	1198.0	1155.4
37.5°	1520.7	1414.3	1234.8	1101.3	1053.1
40°	1449.1	1333.3	1145.7	1008.6	958.4
42.5°	1375.8	1252.1	1057.0	913.9	865.7
45°	1298.5	1168.9	966.2	828.8	782.5
47.5°	1225.1	1088.0	879.3	741.9	699.5
50°	1143.9	1006.8	794.2	660.7	620.3
52.5°	1064.5	919.6	713.0	585.5	548.8
55°	987.3	836.6	627.9	512.1	475.4
57.5°	908.2	753.5	552.7	444.4	413.5
60°	827.0	672.4	473.4	375.0	344.0
62.5°	747.9	593.3	405.7	313.1	297.6
65°	666.7	510.1	336.2	270.6	264.7
67.5°	589.4	432.7	270.6	237.6	231.9
70°	508.2	357.5	224.0	204.8	197.0
72.5°	430.9	287.8	187.4	172.0	168.1
75°	355.5	220.2	154.5	141.0	139.2
77.5°	280.3	156.4	121.7	114.0	110.1
80°	210.5	112.1	92.6	85.1	85.1
82.5°	146.8	75.4	63.7	59.8	59.8
85°	83.0	42.4	36.7	36.7	36.7
87.5°	31.0	15.4	15.4	13.5	13.5
90°	2.5	29.5	80.4	75.5	78.0
92.5°	50.9	69.0	71.5	73.9	73.9
95°	119.9	142.8	147.0	147.0	142.8
97.5°	199.5	220.8	229.9	229.9	229.9
100°	291.4	310.3	316.8	316.8	314.4
102.5°	388.3	402.3	411.3	413.7	411.3
105°	494.2	500.8	505.7	509.8	509.8
107.5°	599.3	609.2	609.2	610.8	599.3
110°	701.1	714.2	714.2	714.2	707.7

TEST NUMBER: P919610

CATALOG NUMBER: DFN2DIP-PN4F0-060D100US935-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	811.1	825.0	822.6	816.0	811.1
115°	919.5	932.5	928.5	926.0	919.5
117.5°	1027.0	1045.1	1033.5	1027.0	1020.4
120°	1135.3	1153.4	1135.3	1135.3	1128.0
122.5°	1233.8	1256.8	1245.3	1238.8	1233.8
125°	1337.3	1357.8	1351.3	1343.8	1341.4
127.5°	1438.3	1463.7	1454.7	1444.8	1438.3
130°	1532.7	1562.2	1558.1	1553.2	1544.2
132.5°	1638.6	1661.6	1663.2	1651.7	1645.1
135°	1729.7	1755.1	1760.1	1757.6	1751.0
137.5°	1831.5	1852.0	1856.1	1854.5	1844.6
140°	1921.0	1941.5	1953.0	1953.0	1944.0
142.5°	2012.9	2033.4	2040.0	2042.5	2033.4
145°	2099.9	2116.3	2129.5	2131.9	2122.9
147.5°	2177.9	2198.5	2208.3	2212.4	2203.4
150°	2258.4	2272.3	2281.4	2288.7	2281.4
152.5°	2329.8	2343.7	2355.3	2364.3	2355.3
155°	2401.2	2407.8	2415.2	2426.6	2419.2
157.5°	2462.8	2467.7	2471.8	2488.2	2476.7
160°	2517.8	2522.7	2525.1	2539.1	2529.3
162.5°	2568.7	2568.7	2571.1	2586.7	2575.2
165°	2612.2	2609.7	2609.7	2626.1	2614.7
167.5°	2651.6	2644.2	2644.2	2660.7	2649.1
170°	2681.1	2674.6	2672.1	2688.6	2674.6
172.5°	2701.6	2695.1	2692.6	2709.0	2695.1
175°	2718.1	2711.5	2706.6	2723.0	2709.0
177.5°	2727.1	2720.6	2715.6	2729.5	2715.6
180°	2723.0	2723.0	2723.0	2723.0	2723.0

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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	7.30	8.03	8.37	9.10	10.55	3.26	4.00	4.33	5.06	6.52
	3H	8.97	9.63	10.05	10.70	12.17	4.45	5.10	5.53	6.18	7.65
	4H	9.58	10.20	10.67	11.28	12.75	4.89	5.51	5.98	6.59	8.07
	6H	10.00	10.57	11.10	11.65	13.14	5.21	5.78	6.31	6.86	8.35
	8H	10.12	10.66	11.22	11.76	13.24	5.30	5.84	6.40	6.94	8.42
	12H	10.18	10.70	11.29	11.79	13.29	5.34	5.85	6.44	6.94	8.45
4H	2H	7.31	7.93	8.40	9.00	10.48	3.85	4.47	4.95	5.55	7.02
	3H	9.13	9.64	10.23	10.75	12.24	5.19	5.71	6.29	6.81	8.30
	4H	9.82	10.29	10.93	11.39	12.90	5.74	6.21	6.84	7.30	8.81
	6H	10.33	10.74	11.45	11.86	13.36	6.15	6.56	7.27	7.67	9.18
	8H	10.51	10.89	11.62	12.00	13.51	6.28	6.66	7.39	7.77	9.29
	12H	10.60	10.94	11.73	12.06	13.59	6.34	6.68	7.47	7.80	9.33
8H	4H	9.78	10.16	10.89	11.27	12.79	6.01	6.39	7.13	7.50	9.02
	6H	10.35	10.66	11.48	11.81	13.33	6.53	6.84	7.66	7.99	9.51
	8H	10.56	10.84	11.71	11.97	13.51	6.72	6.99	7.86	8.12	9.66
	12H	10.70	10.94	11.85	12.07	13.64	6.83	7.07	7.98	8.20	9.77
12H	4H	9.73	10.07	10.86	11.19	12.72	6.01	6.35	7.14	7.48	9.00
	6H	10.32	10.59	11.46	11.73	13.26	6.58	6.85	7.72	7.98	9.52
	8H	10.54	10.78	11.68	11.91	13.48	6.78	7.02	7.93	8.15	9.72

END OF REPORT