

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: P916922

Luminaire Tested: DFN2DIP-PN4F0-070D110US930-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916922
REPORT IS A COMBINATION OF REPORTS P899742 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-070D110US930-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

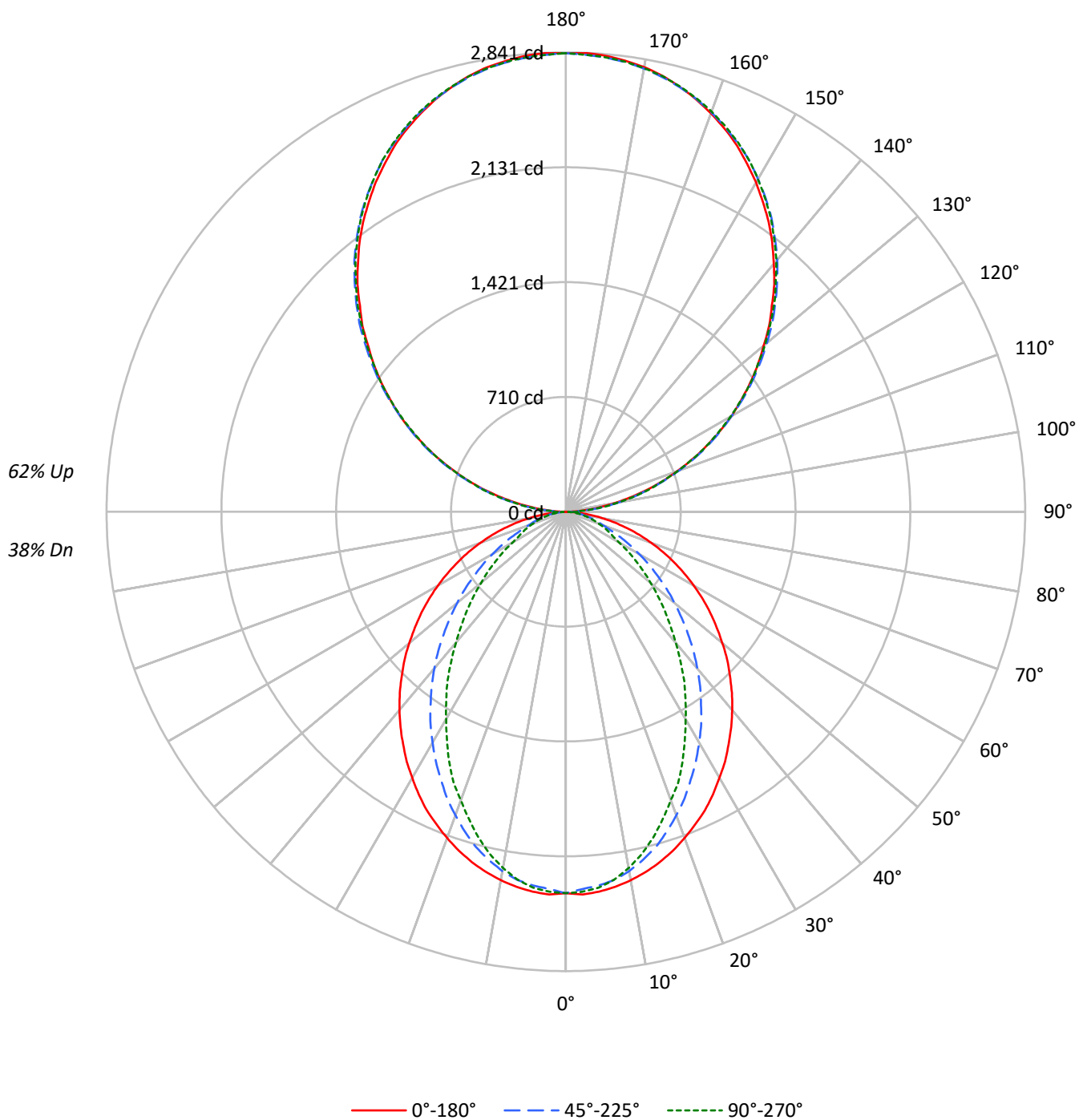
Lumens per Lamp: N/A
Luminaire Lumens: 12787.9 lumens
Efficiency: N/A
Efficacy: 80.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 158.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P916922

CATALOG NUMBER: DFN2DIP-PN4F0-070D110US930-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P916922

CATALOG NUMBER: DFN2DIP-PN4F0-070D110US930-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	104	104	104	104	95	95	95	95	77	77	77	60	60	60	45	45	45
1	95	91	88	84	87	83	80	77	68	66	64	53	52	51	40	40	39
2	87	80	74	69	79	73	68	64	60	56	53	47	45	43	36	34	33
3	80	71	64	58	72	65	59	54	53	49	45	42	39	37	32	30	29
4	73	63	55	49	66	57	51	46	47	42	39	38	34	32	29	27	25
5	67	56	48	43	61	51	45	40	42	37	34	34	30	28	26	24	22
6	62	50	43	37	56	46	39	34	38	33	29	31	27	24	24	21	20
7	57	45	38	32	52	42	35	30	35	30	26	28	24	22	22	19	17
8	53	41	34	29	48	38	31	27	32	27	23	26	22	19	20	18	16
9	49	38	30	26	45	35	28	24	29	24	21	24	20	17	19	16	14
10	46	35	28	23	42	32	26	22	27	22	19	22	18	16	17	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1722	1722	1722
5°	1724	1695	1706
10°	1707	1662	1650
15°	1684	1607	1565
20°	1653	1532	1460
25°	1621	1447	1358
30°	1578	1360	1230
35°	1536	1267	1117
40°	1494	1170	987
45°	1444	1063	869
50°	1393	954	754
55°	1339	839	644
60°	1278	718	530
65°	1206	595	478
70°	1120	480	433
75°	1012	423	394
80°	855	356	343
85°	595	239	260

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2220 cd/sqm

TEST NUMBER: P916922

CATALOG NUMBER: DFN2DIP-PN4F0-070D110US930-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	221.1	1.7
10°-20°	606.9	4.7
20°-30°	852.0	6.7
30°-40°	928.8	7.3
40°-50°	853.6	6.7
50°-60°	670.4	5.2
60°-70°	436.4	3.4
70°-80°	224.6	1.8
80°-90°	65.4	0.5
90°-100°	175.5	1.4
100°-110°	557.7	4.4
110°-120°	954.3	7.5
120°-130°	1255.1	9.8
130°-140°	1408.8	11.0
140°-150°	1381.5	10.8
150°-160°	1158.9	9.1
160°-170°	768.5	6.0
170°-180°	268.6	2.1
0°-30°	1679.9	13.1
0°-40°	2608.7	20.4
0°-60°	4132.7	32.3
0°-90°	4859.0	38.0
90°-120°	1687.5	13.2
90°-150°	5732.8	44.8
90°-180°	7929.0	62.0
0°-180°	12787.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2359	2359	2359	2359	2359	
5°	2359	2348	2320	2340	2333	224
15°	2244	2220	2147	2107	2086	632
25°	2036	1968	1827	1740	1708	937
35°	1755	1646	1458	1324	1276	1098
45°	1434	1291	1067	916	864	1108
55°	1091	924	694	566	525	975
65°	736	564	371	299	292	730
75°	393	243	171	156	154	415
85°	92	47	40	40	40	105
90°	2	31	84	79	81	13
95°	125	149	153	153	149	139
105°	515	522	527	531	531	543
115°	958	971	967	965	958	947
125°	1393	1414	1407	1400	1397	1245
135°	1802	1828	1833	1831	1824	1393
145°	2187	2204	2218	2221	2211	1367
155°	2501	2508	2516	2528	2520	1151
165°	2721	2718	2718	2735	2723	768
175°	2831	2824	2819	2836	2822	269
180°	2836	2836	2836	2836	2836	

TEST NUMBER: P916922

CATALOG NUMBER: DFN2DIP-PN4F0-070D110US930-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2358.7	2358.7	2358.7	2358.7	2358.7
2.5°	2369.3	2358.7	2335.2	2356.7	2352.4
5°	2358.7	2348.1	2320.3	2339.5	2333.1
7.5°	2339.5	2326.8	2296.9	2305.3	2294.7
10°	2313.9	2299.0	2256.3	2249.8	2237.1
12.5°	2281.9	2262.7	2205.0	2192.3	2168.7
15°	2243.5	2219.9	2147.4	2106.9	2085.6
17.5°	2198.6	2164.5	2074.8	2027.8	1993.6
20°	2147.4	2104.6	1998.0	1944.7	1897.6
22.5°	2092.0	2042.8	1918.9	1846.4	1814.5
25°	2036.5	1968.0	1827.2	1739.8	1707.6
27.5°	1970.3	1897.6	1741.8	1641.5	1592.4
30°	1899.9	1818.6	1647.8	1539.1	1481.4
32.5°	1831.5	1733.2	1558.4	1430.2	1376.7
35°	1754.7	1645.8	1458.1	1323.6	1276.4
37.5°	1680.0	1562.4	1364.1	1216.6	1163.4
40°	1600.9	1473.0	1265.8	1114.3	1058.7
42.5°	1519.9	1383.3	1167.7	1009.6	956.4
45°	1434.5	1291.4	1067.4	915.7	864.5
47.5°	1353.4	1201.9	971.3	819.6	772.7
50°	1263.7	1112.2	877.3	729.9	685.3
52.5°	1176.1	1015.9	787.7	646.8	606.3
55°	1090.7	924.2	693.7	565.7	525.2
57.5°	1003.3	832.5	610.6	491.0	456.8
60°	913.6	742.8	522.9	414.3	380.0
62.5°	826.1	655.4	448.2	345.8	328.8
65°	736.5	563.5	371.4	299.0	292.4
67.5°	651.1	478.1	299.0	262.4	256.2
70°	561.4	394.9	247.5	226.2	217.6
72.5°	476.1	318.0	207.0	190.0	185.7
75°	392.7	243.2	170.7	155.8	153.8
77.5°	309.6	172.8	134.5	125.9	121.6
80°	232.6	123.8	102.4	94.0	94.0
82.5°	162.2	83.3	70.4	66.1	66.1
85°	91.7	46.9	40.5	40.5	40.5
87.5°	34.2	17.0	17.0	14.9	14.9
90°	2.5	30.8	83.8	78.7	81.2
92.5°	53.0	71.8	74.4	77.0	77.0
95°	124.8	148.8	153.0	153.0	148.8
97.5°	207.8	230.0	239.5	239.5	239.5
100°	303.5	323.2	330.0	330.0	327.5
102.5°	404.5	419.0	428.4	431.0	428.4
105°	514.8	521.6	526.8	531.0	531.0
107.5°	624.2	634.5	634.5	636.2	624.2
110°	730.3	744.0	744.0	744.0	737.1

TEST NUMBER: P916922

CATALOG NUMBER: DFN2DIP-PN4F0-070D110US930-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	844.8	859.3	856.8	849.9	844.8
115°	957.7	971.3	967.1	964.6	957.7
117.5°	1069.8	1088.5	1076.5	1069.8	1062.9
120°	1182.6	1201.4	1182.6	1182.6	1174.9
122.5°	1285.2	1309.1	1297.1	1290.3	1285.2
125°	1392.9	1414.3	1407.4	1399.8	1397.2
127.5°	1498.1	1524.6	1515.2	1505.0	1498.1
130°	1596.4	1627.3	1622.9	1617.8	1608.4
132.5°	1706.7	1730.7	1732.4	1720.4	1713.6
135°	1801.6	1828.1	1833.3	1830.8	1823.9
137.5°	1907.7	1929.1	1933.3	1931.6	1921.4
140°	2000.9	2022.3	2034.3	2034.3	2024.9
142.5°	2096.7	2118.1	2124.9	2127.4	2118.1
145°	2187.3	2204.4	2218.1	2220.6	2211.3
147.5°	2268.6	2289.9	2300.2	2304.4	2295.1
150°	2352.4	2366.9	2376.3	2384.0	2376.3
152.5°	2426.7	2441.2	2453.2	2462.7	2453.2
155°	2501.2	2507.9	2515.7	2527.7	2519.9
157.5°	2565.3	2570.4	2574.6	2591.8	2579.8
160°	2622.6	2627.7	2630.2	2644.8	2634.6
162.5°	2675.6	2675.6	2678.2	2694.4	2682.4
165°	2720.9	2718.3	2718.3	2735.4	2723.4
167.5°	2761.9	2754.2	2754.2	2771.4	2759.4
170°	2792.7	2785.9	2783.3	2800.4	2785.9
172.5°	2814.1	2807.2	2804.7	2821.8	2807.2
175°	2831.2	2824.4	2819.2	2836.3	2821.8
177.5°	2840.6	2833.7	2828.6	2843.2	2828.6
180°	2836.3	2836.3	2836.3	2836.3	2836.3

TEST NUMBER: P916922

CATALOG NUMBER: DFN2DIP-PN4F0-070D110US930-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	7.80	8.55	8.86	9.60	11.04	3.77	4.51	4.83	5.57	7.00
	3H	9.48	10.14	10.55	11.21	12.66	4.95	5.61	6.02	6.68	8.14
	4H	10.08	10.71	11.16	11.78	13.24	5.40	6.03	6.48	7.10	8.56
	6H	10.50	11.08	11.59	12.15	13.63	5.72	6.29	6.81	7.37	8.84
	8H	10.63	11.18	11.72	12.27	13.73	5.80	6.35	6.90	7.44	8.91
	12H	10.69	11.21	11.79	12.29	13.78	5.85	6.37	6.94	7.45	8.94
4H	2H	7.81	8.44	8.90	9.51	10.97	4.36	4.98	5.44	6.05	7.51
	3H	9.64	10.16	10.73	11.25	12.73	5.70	6.22	6.79	7.32	8.79
	4H	10.33	10.81	11.43	11.89	13.39	6.24	6.72	7.34	7.81	9.30
	6H	10.84	11.25	11.95	12.36	13.85	6.66	7.07	7.77	8.18	9.67
	8H	11.02	11.40	12.12	12.50	14.00	6.79	7.17	7.89	8.27	9.77
	12H	11.11	11.45	12.23	12.57	14.08	6.85	7.19	7.97	8.31	9.82
8H	4H	10.29	10.67	11.39	11.77	13.28	6.52	6.90	7.62	8.00	9.51
	6H	10.85	11.17	11.98	12.31	13.81	7.04	7.35	8.16	8.50	10.00
	8H	11.07	11.35	12.21	12.47	13.99	7.23	7.50	8.36	8.63	10.15
	12H	11.21	11.45	12.35	12.57	14.13	7.34	7.59	8.48	8.71	10.26
12H	4H	10.24	10.58	11.36	11.70	13.21	6.52	6.87	7.64	7.98	9.49
	6H	10.83	11.11	11.96	12.23	13.75	7.08	7.36	8.22	8.49	10.01
	8H	11.05	11.29	12.19	12.41	13.97	7.29	7.54	8.43	8.66	10.21

END OF REPORT