

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: P914117

Luminaire Tested: DFN2DIP-PN4F0-050D100US927-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914117
REPORT IS A COMBINATION OF REPORTS P901239 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-050D100US927-FLLONL
Description: 4 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

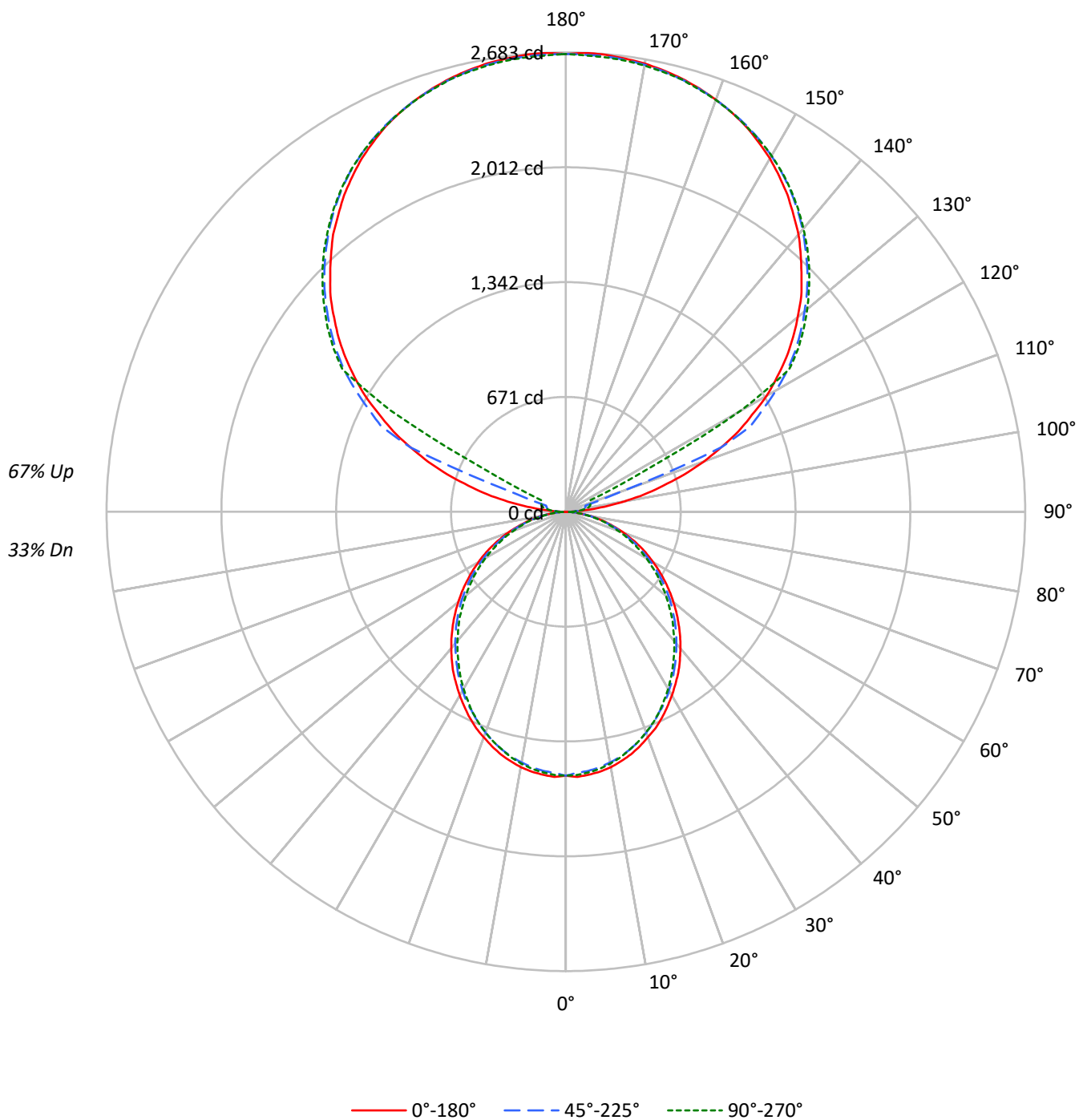
Lumens per Lamp: N/A
Luminaire Lumens: 11763.9 lumens
Efficiency: N/A
Efficacy: 98.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 119
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: P914117

CATALOG NUMBER: DFN2DIP-PN4F0-050D100US927-FLLONL

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
RCR																	
0	103	103	103	103	93	93	93	93	74	74	74		57	57	57		41
1	94	90	86	83	85	81	78	75	65	63	61		50	48	47		36
2	86	78	72	67	77	71	66	62	57	53	50		44	41	39		32
3	78	69	62	56	70	62	56	51	50	46	42		39	36	33		28
4	71	61	53	47	64	55	49	43	44	40	36		34	31	28		25
5	65	54	46	40	59	49	42	37	40	35	31		31	27	25		23
6	60	48	41	35	54	44	37	32	36	31	27		28	24	21		20
7	56	44	36	30	50	40	33	28	32	27	23		25	22	19		19
8	51	39	32	27	46	36	29	25	29	24	21		23	19	17		17
9	48	36	29	24	43	33	26	22	27	22	19		21	18	15		16
10	45	33	26	21	40	30	24	20	25	20	17		19	16	14		15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1125	1125	1125
5°	1127	1109	1117
10°	1118	1095	1102
15°	1101	1077	1079
20°	1079	1052	1055
25°	1057	1022	1027
30°	1029	994	992
35°	1003	962	954
40°	971	929	919
45°	938	896	882
50°	903	861	840
55°	866	821	801
60°	825	773	757
65°	779	724	705
70°	721	663	648
75°	641	591	597
80°	545	500	498
85°	394	341	333

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1424 cd/sqm

TEST NUMBER: P914117

CATALOG NUMBER: DFN2DIP-PN4F0-050D100US927-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	145.1	1.2
10°-20°	408.1	3.5
20°-30°	599.8	5.1
30°-40°	696.6	5.9
40°-50°	695.8	5.9
50°-60°	606.7	5.2
60°-70°	448.5	3.8
70°-80°	253.7	2.2
80°-90°	71.7	0.6
90°-100°	88.1	0.7
100°-110°	328.6	2.8
110°-120°	871.6	7.4
120°-130°	1445.6	12.3
130°-140°	1535.6	13.1
140°-150°	1427.1	12.1
150°-160°	1147.4	9.8
160°-170°	739.3	6.3
170°-180°	254.5	2.2
0°-30°	1153.0	9.8
0°-40°	1849.6	15.7
0°-60°	3152.1	26.8
0°-90°	3926.0	33.4
90°-120°	1288.4	11.0
90°-150°	5696.7	48.4
90°-180°	7838.0	66.6
0°-180°	11763.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1541	1541	1541	1541	1541	
5°	1541	1535	1519	1531	1528	146
15°	1467	1458	1439	1445	1438	413
25°	1328	1316	1291	1294	1291	611
35°	1146	1131	1107	1098	1091	715
45°	932	922	900	883	877	719
55°	706	697	679	661	654	631
65°	476	467	452	439	431	470
75°	249	246	238	230	233	266
85°	61	59	58	53	52	68
90°	2	23	39	48	52	11
95°	126	62	75	85	83	149
105°	588	646	118	139	147	628
115°	1112	1145	1194	298	159	1095
125°	1573	1598	1635	1648	1654	1403
135°	1946	1977	1994	2014	2010	1503
145°	2258	2256	2288	2302	2292	1412
155°	2486	2469	2492	2503	2488	1146
165°	2619	2608	2614	2627	2614	740
175°	2679	2666	2670	2683	2664	255
180°	2674	2674	2674	2674	2674	

TEST NUMBER: P914117

CATALOG NUMBER: DFN2DIP-PN4F0-050D100US927-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1541.2	1541.2	1541.2	1541.2	1541.2
2.5°	1550.1	1542.8	1526.5	1541.2	1538.4
5°	1541.2	1535.4	1519.0	1530.8	1528.0
7.5°	1530.8	1522.0	1505.7	1517.7	1514.7
10°	1514.7	1504.3	1486.5	1498.3	1493.9
12.5°	1492.3	1483.5	1465.8	1473.1	1470.1
15°	1467.1	1458.3	1439.0	1445.0	1437.6
17.5°	1436.0	1427.2	1407.9	1415.2	1407.9
20°	1401.9	1393.1	1372.4	1376.7	1370.9
22.5°	1367.9	1354.6	1335.2	1335.2	1332.2
25°	1327.9	1316.1	1290.9	1293.7	1290.9
27.5°	1283.3	1273.0	1253.8	1249.3	1242.0
30°	1239.0	1227.1	1204.9	1200.5	1194.5
32.5°	1191.5	1182.7	1159.0	1150.0	1144.1
35°	1145.6	1130.8	1107.1	1098.1	1090.8
37.5°	1093.7	1080.4	1056.6	1046.2	1038.9
40°	1040.5	1028.5	1004.7	991.5	985.6
42.5°	988.6	976.6	953.0	938.0	929.2
45°	932.2	921.9	899.5	883.4	877.3
47.5°	877.3	867.0	843.3	826.9	818.1
50°	819.5	812.1	791.4	770.6	763.2
52.5°	763.2	752.8	733.6	717.3	706.9
55°	705.5	696.6	678.7	661.0	653.6
57.5°	647.6	640.2	620.9	603.2	597.1
60°	589.8	584.0	563.2	546.8	542.5
62.5°	533.5	523.2	508.3	493.5	487.6
65°	475.8	466.8	452.0	438.7	431.3
67.5°	416.5	409.0	395.8	385.4	379.4
70°	361.6	355.7	342.3	331.9	326.1
72.5°	305.4	299.4	292.0	281.6	277.2
75°	248.9	246.1	238.5	229.7	232.7
77.5°	198.6	192.6	189.6	185.2	180.9
80°	148.3	146.7	143.7	139.3	136.3
82.5°	100.8	100.8	99.3	93.4	93.4
85°	60.7	59.3	57.8	53.3	51.9
87.5°	26.7	23.8	20.8	16.3	14.8
90°	1.8	23.2	38.6	48.5	52.1
92.5°	48.5	40.6	46.4	50.3	52.1
95°	125.6	61.8	75.3	85.2	83.2
97.5°	226.2	67.7	98.5	104.5	106.4
100°	342.5	77.4	110.3	125.6	129.6
102.5°	470.0	466.4	114.2	135.3	141.2
105°	588.1	646.2	118.1	139.2	147.0
107.5°	725.5	773.7	122.0	143.1	150.9
110°	857.1	897.5	338.6	145.2	152.7

TEST NUMBER: P914117

CATALOG NUMBER: DFN2DIP-PN4F0-050D100US927-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	980.9	1015.6	982.8	148.9	154.9
115°	1112.3	1145.2	1193.7	297.9	158.8
117.5°	1226.5	1265.1	1298.1	1021.4	514.6
120°	1354.2	1383.1	1418.1	1441.3	1180.1
122.5°	1462.4	1493.4	1532.2	1543.7	1545.8
125°	1572.7	1598.0	1634.7	1648.3	1654.0
127.5°	1673.3	1700.4	1729.6	1748.9	1750.7
130°	1768.1	1799.2	1820.4	1841.7	1839.8
132.5°	1864.9	1890.1	1911.3	1928.7	1926.9
135°	1946.2	1977.2	1994.5	2014.0	2010.1
137.5°	2031.2	2054.4	2073.9	2093.3	2087.5
140°	2114.3	2130.0	2151.1	2168.6	2158.9
142.5°	2184.2	2197.7	2222.8	2238.1	2228.6
145°	2257.7	2255.7	2288.5	2302.1	2292.4
147.5°	2321.3	2315.6	2348.4	2358.1	2350.6
150°	2383.4	2369.8	2400.9	2412.4	2402.7
152.5°	2435.5	2420.1	2449.1	2460.8	2447.2
155°	2485.9	2468.6	2491.8	2503.3	2487.9
157.5°	2526.5	2511.1	2528.6	2542.1	2526.5
160°	2561.4	2549.7	2561.4	2572.9	2559.4
162.5°	2592.2	2580.7	2590.4	2603.9	2586.5
165°	2619.3	2607.8	2613.6	2627.1	2613.6
167.5°	2640.7	2628.9	2635.0	2648.5	2631.0
170°	2658.1	2646.4	2650.3	2663.9	2646.4
172.5°	2669.6	2658.1	2662.0	2675.6	2658.1
175°	2679.2	2665.7	2669.6	2683.2	2663.9
177.5°	2683.2	2669.6	2671.7	2685.3	2667.7
180°	2673.5	2673.5	2673.5	2673.5	2673.5

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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	5.91	6.64	7.00	7.73	9.22	5.48	6.20	6.56	7.29	8.78
	3H	7.57	8.22	8.67	9.32	10.82	7.08	7.74	8.18	8.83	10.34
	4H	8.15	8.77	9.26	9.87	11.38	7.66	8.28	8.77	9.38	10.90
	6H	8.55	9.12	9.66	10.22	11.74	8.06	8.63	9.17	9.73	11.25
	8H	8.65	9.19	9.77	10.31	11.83	8.16	8.70	9.28	9.81	11.33
	12H	8.69	9.21	9.82	10.32	11.86	8.19	8.71	9.32	9.82	11.36
4H	2H	6.36	6.98	7.47	8.08	9.59	6.01	6.63	7.12	7.73	9.24
	3H	8.22	8.73	9.34	9.86	11.38	7.82	8.33	8.94	9.46	10.98
	4H	8.93	9.40	10.05	10.52	12.06	8.51	8.99	9.64	10.10	11.65
	6H	9.44	9.85	10.57	10.98	12.52	9.01	9.42	10.15	10.56	12.10
	8H	9.59	9.97	10.72	11.10	12.65	9.16	9.54	10.29	10.67	12.22
	12H	9.66	10.00	10.80	11.14	12.70	9.22	9.56	10.36	10.70	12.26
8H	4H	9.11	9.50	10.25	10.62	12.18	8.74	9.12	9.87	10.25	11.81
	6H	9.74	10.06	10.90	11.23	12.78	9.37	9.68	10.52	10.85	12.40
	8H	9.97	10.24	11.12	11.39	12.96	9.58	9.86	10.74	11.00	12.58
	12H	10.09	10.33	11.25	11.48	13.09	9.69	9.93	10.85	11.08	12.68
12H	4H	9.09	9.44	10.24	10.58	12.14	8.73	9.08	9.88	10.22	11.78
	6H	9.77	10.05	10.93	11.20	12.77	9.41	9.68	10.57	10.83	12.40
	8H	10.01	10.25	11.17	11.40	13.00	9.64	9.88	10.80	11.03	12.63

END OF REPORT