

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: P905942

Luminaire Tested: DFN2DIP-PN4F0-050D120US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905942
REPORT IS A COMBINATION OF REPORTS P899756 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-050D120US835-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

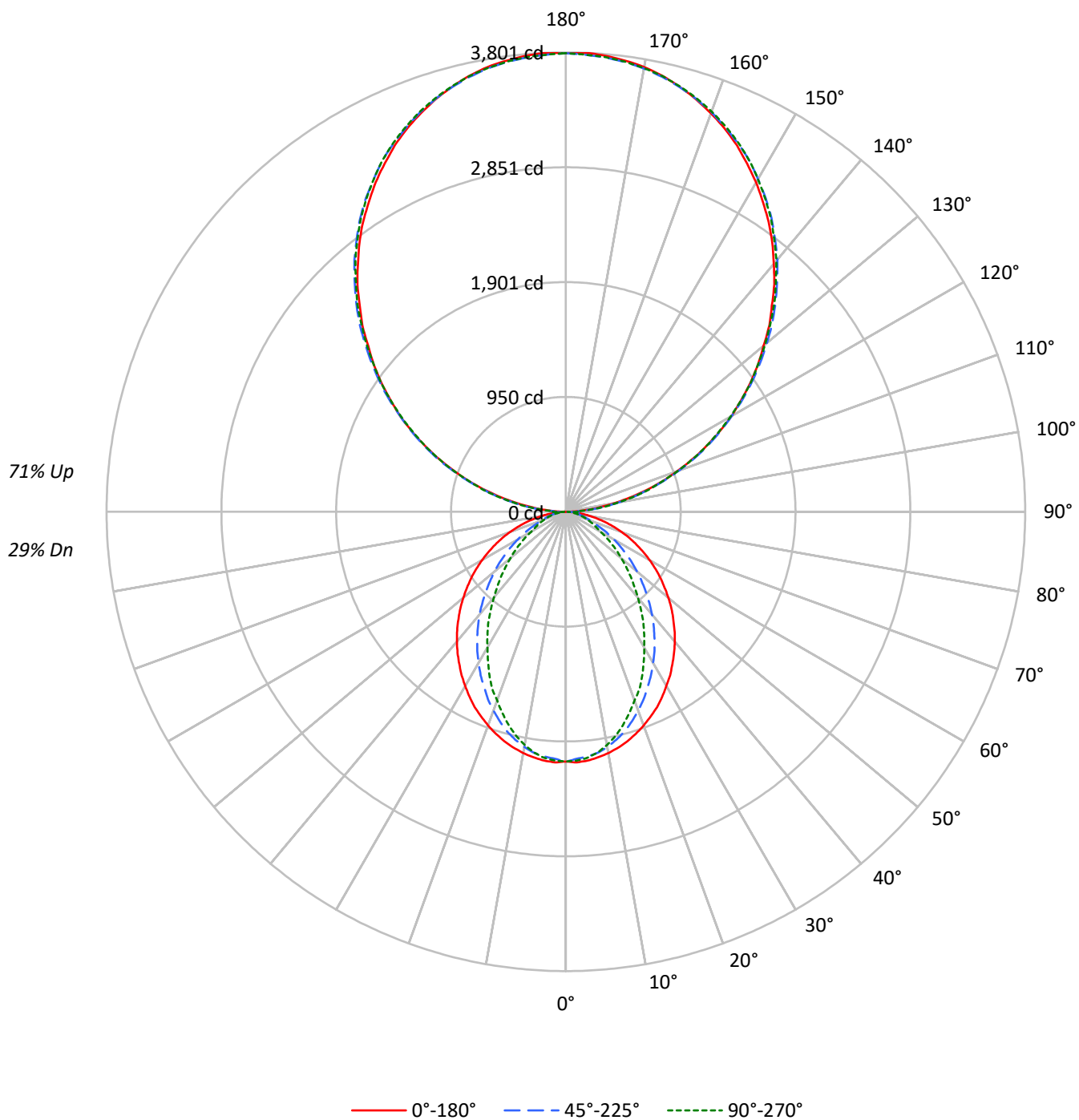
Lumens per Lamp: N/A
Luminaire Lumens: 14870.0 lumens
Efficiency: N/A
Efficacy: 100.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 147.6
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: P905942

CATALOG NUMBER: DFN2DIP-PN4F0-050D120US835-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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	37	37	37
1	93	89	86	82	83	80	77	74	63	61	59	47	46	45	33	32	31
2	85	78	72	68	76	70	65	61	55	52	49	42	40	38	29	28	27
3	78	69	62	56	69	62	56	51	49	45	42	37	34	32	26	24	23
4	71	61	54	48	64	55	49	44	44	39	36	33	30	28	23	22	20
5	65	54	47	41	58	49	42	38	39	34	31	30	27	24	21	19	18
6	60	49	41	36	54	44	37	33	35	30	27	27	24	21	19	17	16
7	56	44	36	31	50	40	33	29	32	27	24	25	21	19	18	16	14
8	52	40	32	27	46	36	30	25	29	24	21	22	19	17	16	14	13
9	48	36	29	24	43	33	27	22	27	22	19	21	17	15	15	13	11
10	45	33	26	22	40	30	24	20	24	20	17	19	16	14	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1508	1508	1508
5°	1511	1485	1494
10°	1496	1456	1446
15°	1475	1408	1371
20°	1448	1342	1279
25°	1420	1268	1190
30°	1383	1192	1077
35°	1346	1110	978
40°	1309	1025	865
45°	1265	931	761
50°	1220	836	661
55°	1174	735	564
60°	1119	629	465
65°	1057	521	419
70°	981	420	379
75°	886	371	345
80°	749	312	300
85°	522	209	228

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2972 cd/sqm

TEST NUMBER: P905942

CATALOG NUMBER: DFN2DIP-PN4F0-050D120US835-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	193.7	1.3
10°-20°	531.7	3.6
20°-30°	746.5	5.0
30°-40°	813.7	5.5
40°-50°	747.9	5.0
50°-60°	587.3	3.9
60°-70°	382.3	2.6
70°-80°	196.8	1.3
80°-90°	61.0	0.4
90°-100°	234.8	1.6
100°-110°	746.2	5.0
110°-120°	1276.9	8.6
120°-130°	1679.4	11.3
130°-140°	1885.0	12.7
140°-150°	1848.5	12.4
150°-160°	1550.6	10.4
160°-170°	1028.3	6.9
170°-180°	359.4	2.4
0°-30°	1471.8	9.9
0°-40°	2285.5	15.4
0°-60°	3620.7	24.3
0°-90°	4260.8	28.7
90°-120°	2257.9	15.2
90°-150°	7670.8	51.6
90°-180°	10609.0	71.3
0°-180°	14870.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2066	2066	2066	2066	2066	
5°	2066	2057	2033	2050	2044	196
15°	1966	1945	1881	1846	1827	554
25°	1784	1724	1601	1524	1496	821
35°	1537	1442	1277	1160	1118	962
45°	1257	1131	935	802	757	971
55°	956	810	608	496	460	854
65°	645	494	325	262	256	640
75°	344	213	150	136	135	364
85°	80	41	36	36	36	92
90°	3	41	112	105	109	15
95°	167	199	205	205	199	186
105°	689	698	705	710	710	727
115°	1281	1300	1294	1291	1281	1267
125°	1864	1892	1883	1873	1870	1666
135°	2411	2446	2453	2450	2440	1863
145°	2927	2950	2968	2971	2959	1829
155°	3347	3356	3366	3382	3372	1540
165°	3641	3637	3637	3660	3644	1027
175°	3788	3779	3772	3795	3776	360
180°	3795	3795	3795	3795	3795	

TEST NUMBER: P905942

CATALOG NUMBER: DFN2DIP-PN4F0-050D120US835-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2066.5	2066.5	2066.5	2066.5	2066.5
2.5°	2075.8	2066.5	2045.9	2064.7	2060.9
5°	2066.5	2057.2	2032.8	2049.6	2044.1
7.5°	2049.6	2038.5	2012.3	2019.7	2010.3
10°	2027.2	2014.1	1976.8	1971.1	1959.9
12.5°	1999.2	1982.4	1931.8	1920.7	1900.0
15°	1965.5	1944.9	1881.4	1845.9	1827.2
17.5°	1926.2	1896.3	1817.7	1776.6	1746.6
20°	1881.4	1843.9	1750.4	1703.8	1662.5
22.5°	1832.8	1789.7	1681.2	1617.7	1589.7
25°	1784.1	1724.2	1600.8	1524.2	1496.0
27.5°	1726.2	1662.5	1526.0	1438.1	1395.1
30°	1664.5	1593.3	1443.7	1348.4	1297.8
32.5°	1604.6	1518.5	1365.3	1253.0	1206.2
35°	1537.3	1441.9	1277.4	1159.5	1118.3
37.5°	1471.8	1368.9	1195.1	1065.9	1019.3
40°	1402.6	1290.5	1108.9	976.2	927.6
42.5°	1331.6	1211.9	1023.0	884.5	837.9
45°	1256.8	1131.4	935.1	802.2	757.3
47.5°	1185.7	1053.0	851.0	718.1	677.0
50°	1107.2	974.4	768.7	639.5	600.4
52.5°	1030.4	890.1	690.1	566.7	531.2
55°	955.6	809.7	607.7	495.6	460.1
57.5°	879.0	729.4	534.9	430.2	400.2
60°	800.4	650.8	458.1	362.9	332.9
62.5°	723.8	574.2	392.7	303.0	288.1
65°	645.2	493.7	325.4	261.9	256.2
67.5°	570.4	418.9	261.9	230.0	224.4
70°	491.9	346.0	216.9	198.2	190.7
72.5°	417.1	278.6	181.4	166.5	162.7
75°	344.1	213.1	149.6	136.5	134.7
77.5°	271.2	151.4	117.9	110.3	106.5
80°	203.8	108.5	89.7	82.3	82.3
82.5°	142.1	73.0	61.7	57.9	57.9
85°	80.4	41.1	35.5	35.5	35.5
87.5°	30.0	14.9	14.9	13.1	13.1
90°	3.4	41.2	112.1	105.3	108.7
92.5°	70.9	96.1	99.5	103.0	103.0
95°	167.0	199.1	204.8	204.8	199.1
97.5°	278.0	307.8	320.4	320.4	320.4
100°	406.2	432.5	441.6	441.6	438.2
102.5°	541.2	560.6	573.2	576.7	573.2
105°	688.8	697.9	704.8	710.5	710.5
107.5°	835.2	849.0	849.0	851.2	835.2
110°	977.1	995.4	995.4	995.4	986.3

TEST NUMBER: P905942

CATALOG NUMBER: DFN2DIP-PN4F0-050D120US835-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1130.4	1149.9	1146.4	1137.3	1130.4
115°	1281.4	1299.8	1294.0	1290.6	1281.4
117.5°	1431.3	1456.5	1440.5	1431.3	1422.2
120°	1582.4	1607.5	1582.4	1582.4	1572.1
122.5°	1719.7	1751.7	1735.7	1726.5	1719.7
125°	1863.8	1892.4	1883.3	1873.0	1869.5
127.5°	2004.6	2040.0	2027.4	2013.7	2004.6
130°	2136.1	2177.3	2171.6	2164.7	2152.1
132.5°	2283.7	2315.8	2318.0	2302.0	2292.9
135°	2410.7	2446.2	2453.1	2449.6	2440.5
137.5°	2552.6	2581.2	2586.9	2584.6	2570.9
140°	2677.3	2705.9	2721.9	2721.9	2709.3
142.5°	2805.5	2834.1	2843.2	2846.6	2834.1
145°	2926.7	2949.6	2967.9	2971.4	2958.8
147.5°	3035.4	3064.0	3077.8	3083.5	3070.9
150°	3147.6	3167.0	3179.6	3189.9	3179.6
152.5°	3247.1	3266.5	3282.6	3295.2	3282.6
155°	3346.6	3355.8	3366.1	3382.1	3371.8
157.5°	3432.5	3439.3	3445.0	3467.9	3451.9
160°	3509.1	3516.0	3519.4	3538.9	3525.1
162.5°	3580.0	3580.0	3583.5	3605.2	3589.2
165°	3640.7	3637.3	3637.3	3660.1	3644.1
167.5°	3695.6	3685.3	3685.3	3708.2	3692.2
170°	3736.8	3727.6	3724.2	3747.1	3727.6
172.5°	3765.4	3756.2	3752.8	3775.7	3756.2
175°	3788.3	3779.1	3772.3	3795.1	3775.7
177.5°	3800.9	3791.7	3784.8	3804.3	3784.8
180°	3795.1	3795.1	3795.1	3795.1	3795.1

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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	6.16	6.84	7.28	7.96	9.50	2.12	2.81	3.25	3.92	5.47
	3H	7.83	8.44	8.96	9.56	11.13	3.30	3.91	4.44	5.03	6.60
	4H	8.43	9.01	9.57	10.13	11.70	3.75	4.32	4.89	5.45	7.02
	6H	8.85	9.38	10.00	10.51	12.09	4.06	4.59	5.21	5.72	7.30
	8H	8.97	9.48	10.12	10.62	12.19	4.15	4.65	5.30	5.79	7.37
	12H	9.03	9.51	10.19	10.64	12.24	4.18	4.66	5.34	5.80	7.40
4H	2H	6.16	6.74	7.31	7.86	9.43	2.70	3.28	3.85	4.40	5.97
	3H	7.98	8.46	9.13	9.61	11.19	4.04	4.52	5.20	5.67	7.25
	4H	8.67	9.11	9.82	10.25	11.85	4.58	5.03	5.74	6.16	7.77
	6H	9.18	9.55	10.34	10.72	12.31	4.99	5.37	6.16	6.53	8.13
	8H	9.35	9.70	10.51	10.86	12.46	5.12	5.47	6.28	6.63	8.24
	12H	9.44	9.76	10.62	10.92	12.54	5.18	5.50	6.36	6.66	8.28
8H	4H	8.62	8.98	9.78	10.13	11.74	4.85	5.21	6.02	6.36	7.97
	6H	9.19	9.48	10.37	10.67	12.28	5.37	5.66	6.55	6.85	8.46
	8H	9.40	9.66	10.59	10.83	12.46	5.56	5.81	6.75	6.99	8.61
	12H	9.54	9.76	10.73	10.93	12.59	5.67	5.89	6.86	7.07	8.72
12H	4H	8.57	8.89	9.75	10.05	11.67	4.85	5.17	6.03	6.34	7.95
	6H	9.16	9.42	10.35	10.59	12.21	5.42	5.67	6.60	6.84	8.47
	8H	9.38	9.60	10.57	10.77	12.43	5.62	5.84	6.81	7.02	8.67

END OF REPORT