

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: P916974

Luminaire Tested: DFN2DIP-PN4F0-090D060US930-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916974
REPORT IS A COMBINATION OF REPORTS P899656 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-090D060US930-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

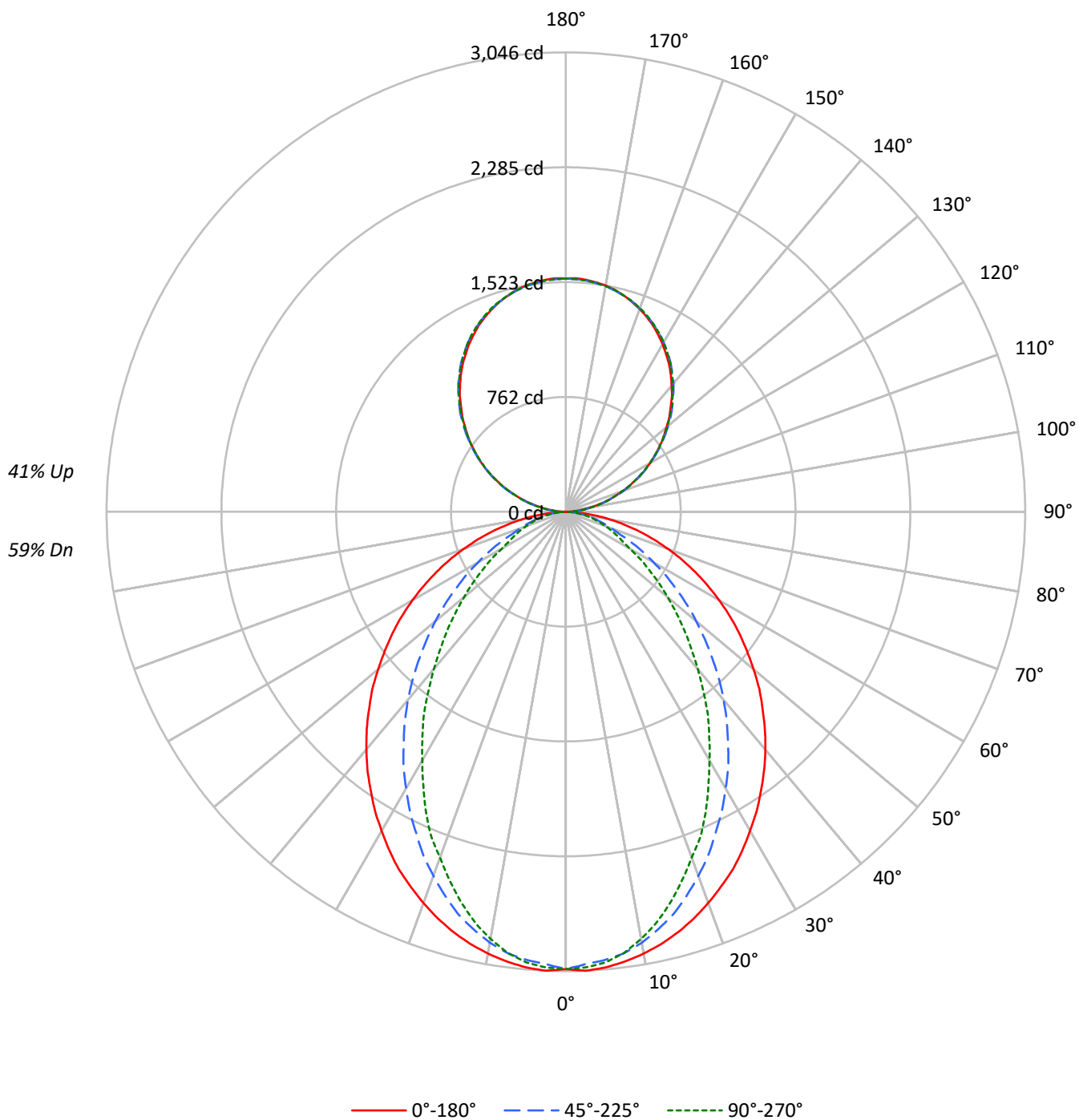
Lumens per Lamp: N/A
Luminaire Lumens: 10566.3 lumens
Efficiency: N/A
Efficacy: 79.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 133.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P916974

CATALOG NUMBER: DFN2DIP-PN4F0-090D060US930-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P916974

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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	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64
1	100	96	92	89	94	90	87	84	78	76	74	68	66	64	58	57	56
2	92	85	79	74	86	79	74	70	69	65	62	60	57	55	52	50	48
3	84	75	68	62	78	70	64	59	62	57	53	54	50	47	46	44	41
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36
5	71	60	52	46	66	56	49	44	50	44	40	44	39	36	38	34	32
6	66	54	46	40	61	51	44	39	45	39	35	40	35	32	35	31	28
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	25
8	57	45	37	32	53	42	35	30	38	32	28	33	29	25	29	26	23
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	24	21
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	25	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2214	2214	2214
5°	2217	2179	2193
10°	2195	2136	2122
15°	2165	2066	2012
20°	2125	1969	1877
25°	2084	1860	1747
30°	2029	1749	1581
35°	1975	1628	1436
40°	1921	1504	1269
45°	1857	1366	1117
50°	1791	1227	970
55°	1722	1078	828
60°	1643	923	682
65°	1551	764	614
70°	1440	617	556
75°	1301	544	507
80°	1099	458	441
85°	765	307	334

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1857 cd/sqm

TEST NUMBER: P916974

CATALOG NUMBER: DFN2DIP-PN4F0-090D060US930-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	284.2	2.7
10°-20°	780.3	7.4
20°-30°	1095.5	10.4
30°-40°	1194.1	11.3
40°-50°	1097.5	10.4
50°-60°	861.9	8.2
60°-70°	561.0	5.3
70°-80°	288.8	2.7
80°-90°	78.1	0.7
90°-100°	95.7	0.9
100°-110°	304.2	2.9
110°-120°	520.6	4.9
120°-130°	684.6	6.5
130°-140°	768.4	7.3
140°-150°	753.5	7.1
150°-160°	632.1	6.0
160°-170°	419.2	4.0
170°-180°	146.5	1.4
0°-30°	2159.9	20.4
0°-40°	3354.0	31.7
0°-60°	5313.5	50.3
0°-90°	6241.4	59.1
90°-120°	920.5	8.7
90°-150°	3127.0	29.6
90°-180°	4325.0	40.9
0°-180°	10566.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3033	3033	3033	3033	3033	
5°	3033	3019	2983	3008	3000	288
15°	2884	2854	2761	2709	2682	813
25°	2618	2530	2349	2237	2196	1204
35°	2256	2116	1875	1702	1641	1412
45°	1844	1660	1372	1177	1111	1424
55°	1402	1188	892	727	675	1253
65°	947	724	478	384	376	939
75°	505	313	220	200	198	534
85°	118	60	52	52	52	135
90°	1	17	46	43	44	10
95°	68	81	84	84	81	76
105°	281	284	287	290	290	296
115°	522	530	528	526	522	517
125°	760	771	768	764	762	679
135°	983	997	1000	999	995	760
145°	1193	1202	1210	1211	1206	745
155°	1364	1368	1372	1379	1374	628
165°	1484	1483	1483	1492	1486	419
175°	1544	1541	1538	1547	1539	147
180°	1547	1547	1547	1547	1547	

TEST NUMBER: P916974

CATALOG NUMBER: DFN2DIP-PN4F0-090D060US930-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3032.7	3032.7	3032.7	3032.7	3032.7
2.5°	3046.4	3032.7	3002.3	3030.1	3024.5
5°	3032.7	3019.0	2983.2	3007.9	2999.7
7.5°	3007.9	2991.6	2953.2	2963.9	2950.2
10°	2975.0	2955.8	2901.1	2892.6	2876.3
12.5°	2933.9	2909.2	2835.0	2818.6	2788.3
15°	2884.4	2854.2	2761.0	2708.8	2681.5
17.5°	2826.8	2782.9	2667.5	2607.2	2563.3
20°	2761.0	2706.0	2568.8	2500.4	2439.8
22.5°	2689.7	2626.5	2467.2	2374.0	2333.0
25°	2618.3	2530.4	2349.3	2236.9	2195.5
27.5°	2533.3	2439.8	2239.5	2110.5	2047.3
30°	2442.7	2338.2	2118.6	1978.9	1904.6
32.5°	2354.7	2228.4	2003.6	1838.8	1770.1
35°	2256.1	2116.0	1874.6	1701.7	1641.1
37.5°	2160.0	2008.9	1753.8	1564.2	1495.8
40°	2058.4	1893.9	1627.4	1432.6	1361.3
42.5°	1954.1	1778.6	1501.3	1298.1	1229.6
45°	1844.4	1660.4	1372.3	1177.2	1111.4
47.5°	1740.1	1545.3	1248.9	1053.8	993.5
50°	1624.8	1430.0	1128.0	938.5	881.1
52.5°	1512.1	1306.3	1012.8	831.6	779.5
55°	1402.3	1188.3	891.9	727.4	675.2
57.5°	1290.0	1070.4	785.1	631.3	587.3
60°	1174.6	955.0	672.4	532.6	488.6
62.5°	1062.3	842.7	576.3	444.7	422.8
65°	946.9	724.5	477.5	384.3	375.9
67.5°	837.1	614.7	384.3	337.5	329.3
70°	721.9	507.8	318.3	290.9	279.8
72.5°	612.0	408.8	266.1	244.3	238.8
75°	504.9	312.7	219.6	200.3	197.7
77.5°	398.0	222.2	172.9	161.9	156.4
80°	299.1	159.3	131.6	120.8	120.8
82.5°	208.5	107.1	90.6	85.0	85.0
85°	117.9	60.3	52.1	52.1	52.1
87.5°	43.9	21.8	21.8	19.2	19.2
90°	1.4	16.8	45.7	42.9	44.3
92.5°	28.9	39.2	40.6	42.0	42.0
95°	68.1	81.1	83.5	83.5	81.1
97.5°	113.3	125.5	130.6	130.6	130.6
100°	165.6	176.3	180.0	180.0	178.6
102.5°	220.6	228.5	233.7	235.1	233.7
105°	280.8	284.5	287.3	289.7	289.7
107.5°	340.5	346.1	346.1	347.0	340.5
110°	398.4	405.8	405.8	405.8	402.0



TEST NUMBER: P916974

CATALOG NUMBER: DFN2DIP-PN4F0-090D060US930-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	460.8	468.7	467.3	463.6	460.8
115°	522.4	529.9	527.5	526.1	522.4
117.5°	583.5	593.8	587.2	583.5	579.8
120°	645.1	655.3	645.1	645.1	640.8
122.5°	701.0	714.0	707.5	703.8	701.0
125°	759.8	771.4	767.7	763.5	762.1
127.5°	817.2	831.6	826.5	820.9	817.2
130°	870.8	887.6	885.3	882.5	877.3
132.5°	931.0	944.0	944.9	938.4	934.7
135°	982.8	997.2	1000.0	998.6	994.8
137.5°	1040.6	1052.2	1054.6	1053.6	1048.1
140°	1091.4	1103.1	1109.6	1109.6	1104.5
142.5°	1143.6	1155.3	1159.0	1160.4	1155.3
145°	1193.1	1202.4	1209.9	1211.3	1206.2
147.5°	1237.4	1249.0	1254.7	1256.9	1251.8
150°	1283.1	1291.0	1296.2	1300.3	1296.2
152.5°	1323.6	1331.6	1338.1	1343.3	1338.1
155°	1364.2	1368.0	1372.1	1378.8	1374.5
157.5°	1399.2	1402.1	1404.4	1413.7	1407.2
160°	1430.5	1433.3	1434.7	1442.6	1437.0
162.5°	1459.4	1459.4	1460.8	1469.7	1463.1
165°	1484.1	1482.7	1482.7	1492.1	1485.6
167.5°	1506.5	1502.4	1502.4	1511.6	1505.1
170°	1523.3	1519.6	1518.2	1527.5	1519.6
172.5°	1535.0	1531.2	1529.8	1539.1	1531.2
175°	1544.3	1540.6	1537.7	1547.1	1539.1
177.5°	1549.4	1545.7	1542.9	1550.8	1542.9
180°	1547.1	1547.1	1547.1	1547.1	1547.1

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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	10.72	11.63	11.60	12.53	13.67	6.69	7.60	7.57	8.49	9.63
	3H	12.41	13.22	13.30	14.13	15.29	7.88	8.70	8.78	9.60	10.77
	4H	13.02	13.79	13.93	14.70	15.88	8.34	9.10	9.25	10.02	11.19
	6H	13.45	14.16	14.37	15.08	16.26	8.66	9.37	9.58	10.29	11.48
	8H	13.58	14.25	14.51	15.19	16.37	8.76	9.43	9.68	10.36	11.55
	12H	13.65	14.29	14.58	15.22	16.43	8.80	9.44	9.74	10.37	11.58
4H	2H	10.75	11.52	11.66	12.43	13.60	7.29	8.06	8.21	8.97	10.15
	3H	12.59	13.23	13.51	14.17	15.36	8.65	9.29	9.58	10.23	11.42
	4H	13.29	13.87	14.22	14.81	16.02	9.20	9.78	10.14	10.72	11.94
	6H	13.81	14.31	14.76	15.27	16.49	9.63	10.13	10.58	11.09	12.31
	8H	13.99	14.45	14.94	15.41	16.64	9.76	10.23	10.71	11.18	12.41
	12H	14.09	14.51	15.06	15.48	16.72	9.83	10.25	10.80	11.22	12.46
8H	4H	13.26	13.73	14.21	14.68	15.91	9.49	9.96	10.44	10.91	12.14
	6H	13.83	14.22	14.81	15.22	16.44	10.01	10.40	10.99	11.40	12.62
	8H	14.05	14.39	15.04	15.38	16.62	10.21	10.55	11.19	11.53	12.78
	12H	14.20	14.50	15.18	15.48	16.77	10.33	10.63	11.32	11.61	12.90
12H	4H	13.22	13.64	14.19	14.61	15.84	9.50	9.92	10.47	10.89	12.13
	6H	13.81	14.15	14.79	15.14	16.38	10.06	10.40	11.05	11.39	12.64
	8H	14.03	14.33	15.02	15.32	16.61	10.28	10.58	11.27	11.56	12.85

END OF REPORT