

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: P919663

Luminaire Tested: DFN2DIP-PN4F0-080D050US935-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919663
REPORT IS A COMBINATION OF REPORTS P901156 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-080D050US935-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

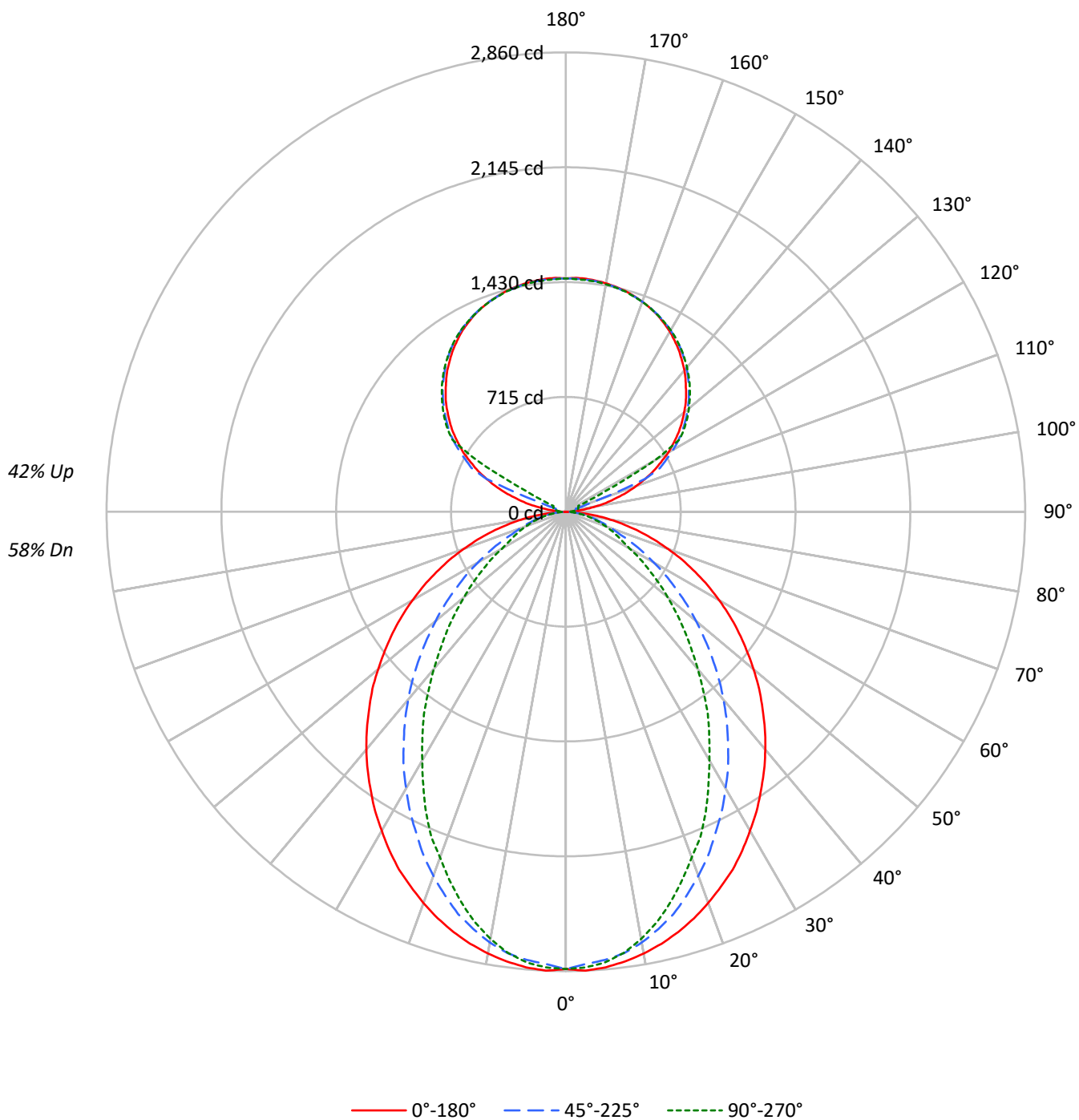
Lumens per Lamp: N/A
Luminaire Lumens: 10116.8 lumens
Efficiency: N/A
Efficacy: 88.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 114.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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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	109	109	109	109	102	102	102	102	88	88	88	75	75	75	63	63	63
1	100	96	92	89	93	90	86	83	78	75	73	67	65	64	57	56	55
2	92	84	79	74	85	79	74	69	69	65	62	59	57	54	51	49	47
3	84	75	68	62	78	70	64	59	61	56	52	53	49	46	45	43	41
4	77	67	59	53	72	62	56	50	55	49	45	48	44	40	41	38	35
5	71	60	52	46	66	56	49	44	49	44	39	43	39	35	37	34	31
6	66	54	46	40	61	51	43	38	45	39	35	39	35	31	34	31	28
7	61	49	41	35	57	46	39	34	41	35	31	36	31	28	31	28	25
8	57	44	37	32	53	42	35	30	37	32	28	33	28	25	29	25	23
9	53	41	33	28	49	39	32	27	34	29	25	30	26	23	27	23	20
10	49	38	30	26	46	36	29	25	32	26	23	28	24	21	25	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2078	2078	2078
5°	2081	2045	2059
10°	2061	2006	1992
15°	2032	1939	1889
20°	1995	1848	1762
25°	1956	1746	1640
30°	1905	1641	1484
35°	1854	1529	1348
40°	1803	1412	1191
45°	1743	1283	1049
50°	1681	1152	910
55°	1617	1012	777
60°	1542	866	640
65°	1456	717	576
70°	1352	579	522
75°	1221	511	476
80°	1031	430	414
85°	719	288	314

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1743 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	266.8	2.6
10°-20°	732.4	7.2
20°-30°	1028.3	10.2
30°-40°	1120.9	11.1
40°-50°	1030.3	10.2
50°-60°	809.1	8.0
60°-70°	526.6	5.2
70°-80°	271.1	2.7
80°-90°	71.8	0.7
90°-100°	47.9	0.5
100°-110°	178.6	1.8
110°-120°	473.7	4.7
120°-130°	785.6	7.8
130°-140°	834.5	8.2
140°-150°	775.6	7.7
150°-160°	623.5	6.2
160°-170°	401.8	4.0
170°-180°	138.3	1.4
0°-30°	2027.6	20.0
0°-40°	3148.5	31.1
0°-60°	4987.8	49.3
0°-90°	5857.4	57.9
90°-120°	700.2	6.9
90°-150°	3095.8	30.6
90°-180°	4259.0	42.1
0°-180°	10116.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2847	2847	2847	2847	2847	
5°	2847	2834	2800	2824	2816	270
15°	2708	2679	2592	2543	2517	763
25°	2458	2375	2205	2100	2061	1130
35°	2118	1986	1760	1597	1540	1326
45°	1731	1559	1288	1105	1043	1337
55°	1316	1116	837	683	634	1176
65°	889	680	448	361	353	881
75°	474	294	206	188	186	501
85°	111	57	49	49	49	127
90°	1	13	21	26	28	10
95°	68	34	41	46	45	81
105°	320	351	64	76	80	342
115°	604	622	649	162	86	595
125°	855	868	888	896	899	762
135°	1058	1074	1084	1094	1092	817
145°	1227	1226	1244	1251	1246	767
155°	1351	1342	1354	1360	1352	622
165°	1423	1417	1420	1428	1420	402
175°	1456	1449	1451	1458	1448	139
180°	1453	1453	1453	1453	1453	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2846.8	2846.8	2846.8	2846.8	2846.8
2.5°	2859.6	2846.8	2818.4	2844.3	2839.1
5°	2846.8	2834.0	2800.3	2823.6	2815.9
7.5°	2823.6	2808.2	2772.2	2782.3	2769.4
10°	2792.6	2774.7	2723.3	2715.3	2700.0
12.5°	2754.2	2730.9	2661.2	2645.8	2617.4
15°	2707.7	2679.3	2591.8	2542.9	2517.1
17.5°	2653.5	2612.3	2504.0	2447.5	2406.1
20°	2591.8	2540.1	2411.4	2347.2	2290.3
22.5°	2524.8	2465.5	2316.0	2228.5	2189.9
25°	2457.8	2375.3	2205.3	2099.8	2061.0
27.5°	2378.0	2290.3	2102.2	1981.2	1921.8
30°	2293.0	2194.9	1988.8	1857.6	1787.9
32.5°	2210.4	2091.9	1880.8	1726.1	1661.6
35°	2117.8	1986.3	1759.7	1597.4	1540.5
37.5°	2027.6	1885.8	1646.3	1468.3	1404.1
40°	1932.3	1777.8	1527.7	1344.8	1277.8
42.5°	1834.4	1669.6	1409.3	1218.6	1154.3
45°	1731.3	1558.6	1288.2	1105.1	1043.4
47.5°	1633.5	1450.6	1172.3	989.2	932.6
50°	1525.2	1342.4	1058.9	881.0	827.1
52.5°	1419.4	1226.1	950.6	780.7	731.8
55°	1316.4	1115.5	837.2	682.8	633.9
57.5°	1210.9	1004.8	736.9	592.6	551.3
60°	1102.6	896.6	631.1	499.9	458.7
62.5°	997.1	791.0	541.0	417.4	396.9
65°	888.9	680.0	448.2	360.8	352.8
67.5°	785.8	577.0	360.8	316.8	309.2
70°	677.6	476.7	298.8	273.0	262.7
72.5°	574.5	383.7	249.9	229.4	224.1
75°	474.0	293.6	206.1	188.0	185.6
77.5°	373.7	208.5	162.4	152.0	146.8
80°	280.7	149.6	123.6	113.4	113.4
82.5°	195.7	100.6	85.0	79.8	79.8
85°	110.7	56.6	48.9	48.9	48.9
87.5°	41.2	20.5	20.5	18.1	18.1
90°	1.0	12.6	21.0	26.3	28.3
92.5°	26.3	22.1	25.2	27.4	28.3
95°	68.3	33.6	41.0	46.3	45.2
97.5°	123.0	36.9	53.6	56.8	57.8
100°	186.1	42.1	59.9	68.3	70.4
102.5°	255.5	253.4	62.1	73.5	76.8
105°	319.6	351.2	64.1	75.7	79.9
107.5°	394.3	420.4	66.3	77.7	82.1
110°	465.8	487.8	184.0	78.9	83.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	533.0	551.9	534.1	80.9	84.1
115°	604.5	622.3	648.7	162.0	86.3
117.5°	666.5	687.5	705.5	555.0	279.7
120°	735.9	751.7	770.6	783.2	641.3
122.5°	794.7	811.6	832.7	839.0	840.1
125°	854.6	868.4	888.4	895.7	898.9
127.5°	909.3	924.0	940.0	950.4	951.4
130°	960.9	977.7	989.2	1000.8	999.9
132.5°	1013.5	1027.2	1038.6	1048.2	1047.1
135°	1057.6	1074.5	1083.8	1094.5	1092.3
137.5°	1103.8	1116.5	1127.0	1137.6	1134.5
140°	1149.0	1157.5	1169.0	1178.4	1173.3
142.5°	1187.0	1194.4	1208.0	1216.3	1211.1
145°	1226.9	1225.8	1243.6	1251.0	1245.8
147.5°	1261.5	1258.3	1276.3	1281.5	1277.4
150°	1295.2	1287.9	1304.7	1311.0	1305.7
152.5°	1323.5	1315.2	1330.9	1337.3	1329.9
155°	1350.9	1341.5	1354.1	1360.4	1352.0
157.5°	1372.9	1364.6	1374.1	1381.5	1372.9
160°	1392.0	1385.6	1392.0	1398.2	1390.9
162.5°	1408.7	1402.5	1407.6	1415.0	1405.6
165°	1423.4	1417.2	1420.3	1427.6	1420.3
167.5°	1435.0	1428.7	1431.9	1439.2	1429.8
170°	1444.5	1438.1	1440.3	1447.6	1438.1
172.5°	1450.8	1444.5	1446.6	1454.0	1444.5
175°	1456.0	1448.6	1450.8	1458.1	1447.6
177.5°	1458.1	1450.8	1451.9	1459.2	1449.7
180°	1452.8	1452.8	1452.8	1452.8	1452.8

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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	10.40	11.30	11.30	12.21	13.37	6.37	7.27	7.26	8.17	9.33
	3H	12.09	12.89	12.99	13.81	14.99	7.56	8.37	8.47	9.28	10.47
	4H	12.70	13.46	13.62	14.38	15.58	8.02	8.78	8.94	9.70	10.89
	6H	13.13	13.83	14.06	14.76	15.96	8.34	9.04	9.27	9.97	11.17
	8H	13.26	13.92	14.20	14.87	16.07	8.43	9.10	9.37	10.05	11.25
	12H	13.32	13.96	14.27	14.90	16.12	8.48	9.11	9.43	10.05	11.28
4H	2H	10.43	11.19	11.36	12.11	13.30	6.97	7.73	7.90	8.66	9.85
	3H	12.27	12.90	13.20	13.85	15.06	8.33	8.96	9.27	9.92	11.12
	4H	12.97	13.54	13.91	14.49	15.72	8.88	9.46	9.83	10.41	11.64
	6H	13.49	13.98	14.45	14.95	16.19	9.31	9.80	10.27	10.77	12.00
	8H	13.67	14.13	14.63	15.09	16.34	9.44	9.90	10.40	10.86	12.11
	12H	13.76	14.18	14.74	15.16	16.41	9.51	9.92	10.48	10.90	12.15
8H	4H	12.94	13.40	13.90	14.37	15.61	9.17	9.63	10.13	10.60	11.84
	6H	13.51	13.89	14.50	14.90	16.14	9.69	10.07	10.68	11.08	12.32
	8H	13.73	14.07	14.72	15.06	16.32	9.88	10.22	10.88	11.22	12.48
	12H	13.87	14.17	14.87	15.16	16.47	10.01	10.30	11.00	11.29	12.60
12H	4H	12.89	13.31	13.87	14.29	15.54	9.18	9.59	10.16	10.58	11.83
	6H	13.49	13.82	14.48	14.82	16.08	9.74	10.08	10.74	11.07	12.34
	8H	13.71	14.01	14.71	15.00	16.31	9.96	10.25	10.95	11.24	12.55