

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: P906022

Luminaire Tested: DFN2DIP-PN4F0-080D050US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P906022
REPORT IS A COMBINATION OF REPORTS P899636 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-080D050US835-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

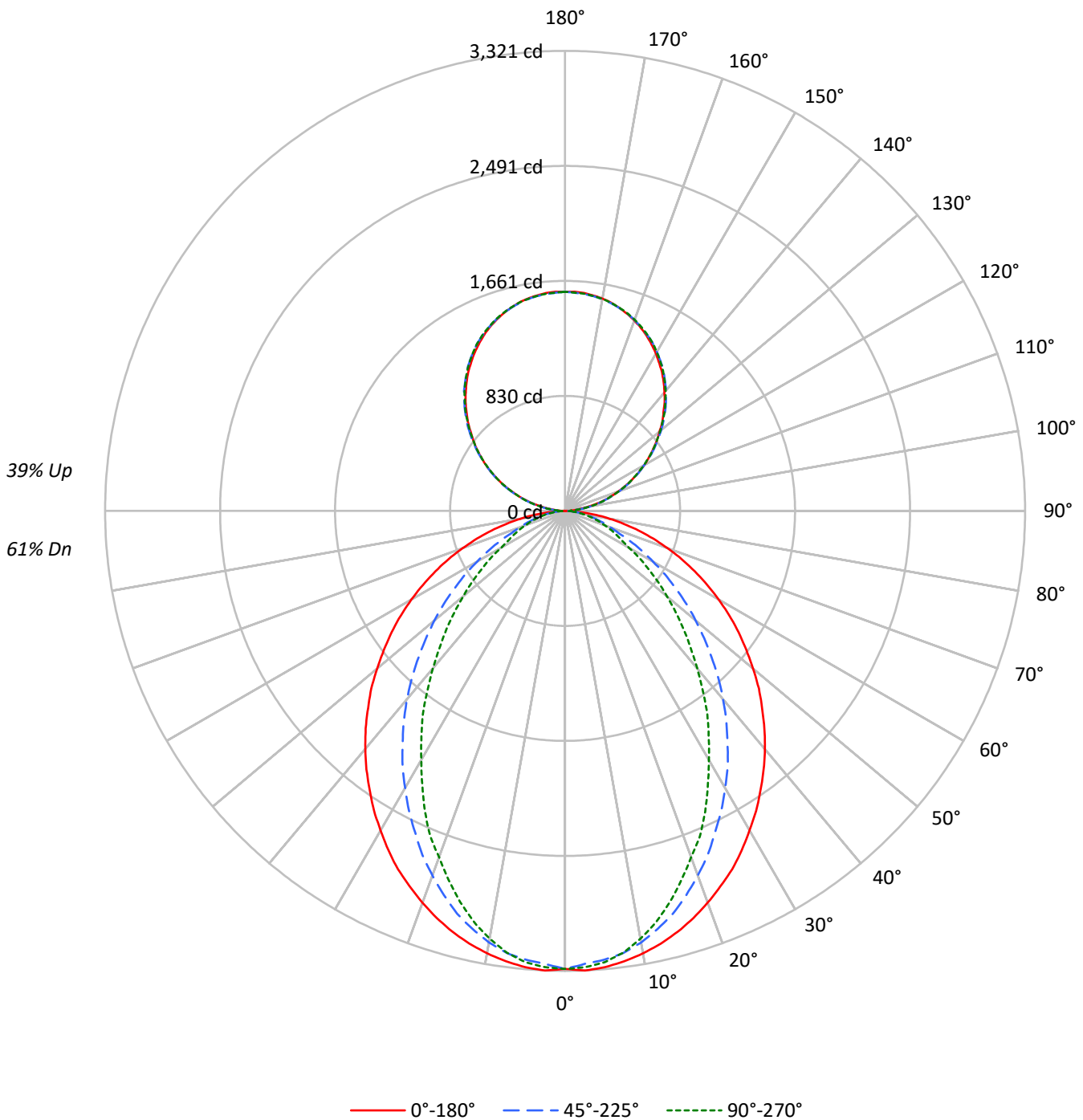
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11225.0 lumens
Efficiency: N/A
Efficacy: 97.8 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-Direct

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					0				
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0									
RCR																														
0	110	110	110	110	103	103	103	103	89	89	89	77	77	77	66	66	66	66	66	66	61									
1	101	97	93	89	94	91	87	84	79	77	75	69	67	65	59	58	57	59	58	57	52									
2	92	85	79	74	86	80	75	70	70	66	63	61	58	56	53	51	49	53	51	49	45									
3	85	75	68	62	79	71	64	59	62	57	53	55	51	48	47	45	42	47	45	42	39									
4	78	67	59	53	72	63	56	51	56	50	46	49	45	41	43	39	37	43	39	37	34									
5	72	60	52	46	67	57	50	44	50	45	40	44	40	36	39	35	32	39	35	32	30									
6	66	54	46	41	62	51	44	39	46	40	35	40	36	32	35	32	29	35	32	29	26									
7	61	49	41	36	57	47	39	34	42	36	32	37	32	29	32	29	26	32	29	26	24									
8	57	45	37	32	53	43	36	31	38	32	28	34	29	26	30	26	23	30	26	23	21									
9	53	41	34	29	50	39	32	28	35	29	26	31	27	23	28	24	21	28	24	21	19									
10	50	38	31	26	47	36	29	25	32	27	23	29	25	21	26	22	20	26	22	20	18									

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2414	2414	2414
5°	2417	2376	2391
10°	2393	2329	2313
15°	2360	2253	2194
20°	2317	2147	2046
25°	2272	2028	1904
30°	2212	1906	1724
35°	2154	1775	1565
40°	2094	1640	1383
45°	2024	1490	1218
50°	1953	1338	1057
55°	1878	1176	903
60°	1791	1006	743
65°	1691	833	669
70°	1570	673	607
75°	1418	594	553
80°	1198	499	481
85°	835	335	364

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2024 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	309.9	2.8
10°-20°	850.7	7.6
20°-30°	1194.3	10.6
30°-40°	1301.9	11.6
40°-50°	1196.6	10.7
50°-60°	939.7	8.4
60°-70°	611.7	5.4
70°-80°	314.9	2.8
80°-90°	84.9	0.8
90°-100°	97.8	0.9
100°-110°	310.9	2.8
110°-120°	532.1	4.7
120°-130°	699.7	6.2
130°-140°	785.4	7.0
140°-150°	770.2	6.9
150°-160°	646.1	5.8
160°-170°	428.5	3.8
170°-180°	149.8	1.3
0°-30°	2354.9	21.0
0°-40°	3656.8	32.6
0°-60°	5793.1	51.6
0°-90°	6804.5	60.6
90°-120°	940.8	8.4
90°-150°	3196.2	28.5
90°-180°	4421.0	39.4
0°-180°	11225.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3306	3306	3306	3306	3306	
5°	3306	3292	3252	3279	3270	314
15°	3145	3112	3010	2953	2924	886
25°	2855	2759	2561	2439	2394	1313
35°	2460	2307	2044	1855	1789	1540
45°	2011	1810	1496	1284	1212	1553
55°	1529	1296	972	793	736	1366
65°	1032	790	521	419	410	1024
75°	550	341	239	218	216	582
85°	129	66	57	57	57	148
90°	1	17	47	44	45	11
95°	70	83	85	85	83	77
105°	287	291	294	296	296	303
115°	534	542	539	538	534	528
125°	777	788	785	780	779	694
135°	1004	1019	1022	1021	1017	776
145°	1220	1229	1237	1238	1233	762
155°	1394	1398	1402	1409	1405	642
165°	1517	1516	1516	1525	1518	428
175°	1578	1575	1572	1581	1573	150
180°	1581	1581	1581	1581	1581	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3306.4	3306.4	3306.4	3306.4	3306.4
2.5°	3321.3	3306.4	3273.4	3303.5	3297.5
5°	3306.4	3291.5	3252.4	3279.4	3270.5
7.5°	3279.4	3261.6	3219.7	3231.5	3216.5
10°	3243.5	3222.6	3162.9	3153.7	3135.9
12.5°	3198.8	3171.8	3090.8	3073.0	3040.0
15°	3144.8	3111.8	3010.2	2953.4	2923.5
17.5°	3081.9	3034.0	2908.3	2842.6	2794.6
20°	3010.2	2950.2	2800.7	2726.1	2660.0
22.5°	2932.4	2863.5	2689.9	2588.3	2543.5
25°	2854.6	2758.8	2561.3	2438.8	2393.7
27.5°	2761.9	2660.0	2441.6	2301.0	2232.1
30°	2663.2	2549.2	2309.9	2157.5	2076.5
32.5°	2567.3	2429.6	2184.5	2004.8	1929.9
35°	2459.7	2307.0	2043.8	1855.3	1789.2
37.5°	2354.9	2190.2	1912.1	1705.4	1630.8
40°	2244.2	2064.8	1774.3	1561.9	1484.1
42.5°	2130.5	1939.1	1636.8	1415.3	1340.6
45°	2010.8	1810.2	1496.2	1283.5	1211.8
47.5°	1897.2	1684.8	1361.6	1148.9	1083.2
50°	1771.4	1559.1	1229.9	1023.2	960.6
52.5°	1648.6	1424.1	1104.1	906.7	849.9
55°	1528.9	1295.6	972.4	793.0	736.2
57.5°	1406.4	1167.0	855.9	688.3	640.3
60°	1280.6	1041.3	733.0	580.6	532.7
62.5°	1158.1	918.7	628.3	484.8	461.0
65°	1032.4	789.8	520.6	419.1	409.8
67.5°	912.7	670.2	419.1	367.9	359.1
70°	787.0	553.7	347.0	317.1	305.1
72.5°	667.3	445.7	290.2	266.4	260.3
75°	550.5	341.0	239.4	218.4	215.6
77.5°	434.0	242.2	188.6	176.5	170.5
80°	326.0	173.7	143.5	131.7	131.7
82.5°	227.3	116.8	98.7	92.7	92.7
85°	128.6	65.7	56.8	56.8	56.8
87.5°	47.9	23.8	23.8	21.0	21.0
90°	1.4	17.2	46.7	43.9	45.3
92.5°	29.6	40.0	41.5	42.9	42.9
95°	69.6	83.0	85.3	85.3	83.0
97.5°	115.8	128.2	133.5	133.5	133.5
100°	169.2	180.2	184.0	184.0	182.6
102.5°	225.5	233.6	238.8	240.3	238.8
105°	287.0	290.8	293.7	296.0	296.0
107.5°	348.0	353.7	353.7	354.7	348.0
110°	407.1	414.8	414.8	414.8	410.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	471.0	479.1	477.7	473.9	471.0
115°	533.9	541.6	539.2	537.8	533.9
117.5°	596.4	606.9	600.2	596.4	592.6
120°	659.3	669.8	659.3	659.3	655.0
122.5°	716.5	729.9	723.2	719.4	716.5
125°	776.6	788.5	784.7	780.4	779.0
127.5°	835.2	850.0	844.8	839.0	835.2
130°	890.1	907.2	904.8	902.0	896.7
132.5°	951.6	964.9	965.9	959.2	955.4
135°	1004.5	1019.2	1022.1	1020.7	1016.9
137.5°	1063.6	1075.5	1077.9	1076.9	1071.2
140°	1115.5	1127.5	1134.1	1134.1	1128.9
142.5°	1168.9	1180.9	1184.7	1186.1	1180.9
145°	1219.5	1229.0	1236.6	1238.1	1232.8
147.5°	1264.8	1276.7	1282.4	1284.8	1279.5
150°	1311.5	1319.6	1324.8	1329.1	1324.8
152.5°	1353.0	1361.1	1367.7	1373.0	1367.7
155°	1394.4	1398.2	1402.5	1409.2	1404.9
157.5°	1430.2	1433.0	1435.4	1445.0	1438.3
160°	1462.1	1465.0	1466.4	1474.5	1468.8
162.5°	1491.7	1491.7	1493.1	1502.2	1495.5
165°	1517.0	1515.5	1515.5	1525.1	1518.4
167.5°	1539.8	1535.5	1535.5	1545.1	1538.4
170°	1557.0	1553.2	1551.8	1561.3	1553.2
172.5°	1568.9	1565.1	1563.7	1573.2	1565.1
175°	1578.5	1574.6	1571.8	1581.3	1573.2
177.5°	1583.7	1579.9	1577.0	1585.1	1577.0
180°	1581.3	1581.3	1581.3	1581.3	1581.3



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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	11.15	12.08	12.02	12.96	14.07	7.12	8.04	7.98	8.93	10.04
	3H	12.84	13.67	13.72	14.56	15.70	8.31	9.14	9.19	10.03	11.17
	4H	13.45	14.24	14.35	15.13	16.29	8.77	9.55	9.66	10.45	11.60
	6H	13.88	14.60	14.79	15.51	16.67	9.10	9.81	10.00	10.72	11.88
	8H	14.01	14.70	14.93	15.62	16.78	9.19	9.87	10.10	10.80	11.96
	12H	14.08	14.73	15.00	15.65	16.83	9.24	9.89	10.16	10.80	11.99
4H	2H	11.18	11.96	12.08	12.86	14.01	7.73	8.51	8.63	9.41	10.56
	3H	13.02	13.67	13.93	14.60	15.77	9.09	9.73	10.00	10.66	11.83
	4H	13.72	14.31	14.64	15.24	16.43	9.64	10.23	10.56	11.15	12.35
	6H	14.24	14.75	15.18	15.70	16.89	10.06	10.57	11.00	11.52	12.71
	8H	14.42	14.90	15.36	15.84	17.05	10.19	10.67	11.13	11.61	12.82
	12H	14.52	14.95	15.48	15.91	17.12	10.26	10.69	11.22	11.65	12.86
8H	4H	13.70	14.17	14.63	15.11	16.32	9.93	10.40	10.86	11.35	12.55
	6H	14.27	14.66	15.23	15.65	16.85	10.45	10.84	11.41	11.83	13.03
	8H	14.49	14.83	15.46	15.81	17.03	10.64	10.99	11.62	11.96	13.19
	12H	14.63	14.94	15.61	15.91	17.18	10.77	11.07	11.74	12.04	13.31
12H	4H	13.65	14.08	14.61	15.04	16.25	9.94	10.36	10.89	11.33	12.54
	6H	14.24	14.59	15.22	15.57	16.79	10.50	10.85	11.47	11.82	13.04
	8H	14.47	14.78	15.45	15.74	17.02	10.72	11.02	11.69	11.99	13.26