

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: P908081

Luminaire Tested: DFN2DIP-HX3F0-070D050US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908081
REPORT IS A COMBINATION OF REPORTS P900758 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-070D050US840-RLLONL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

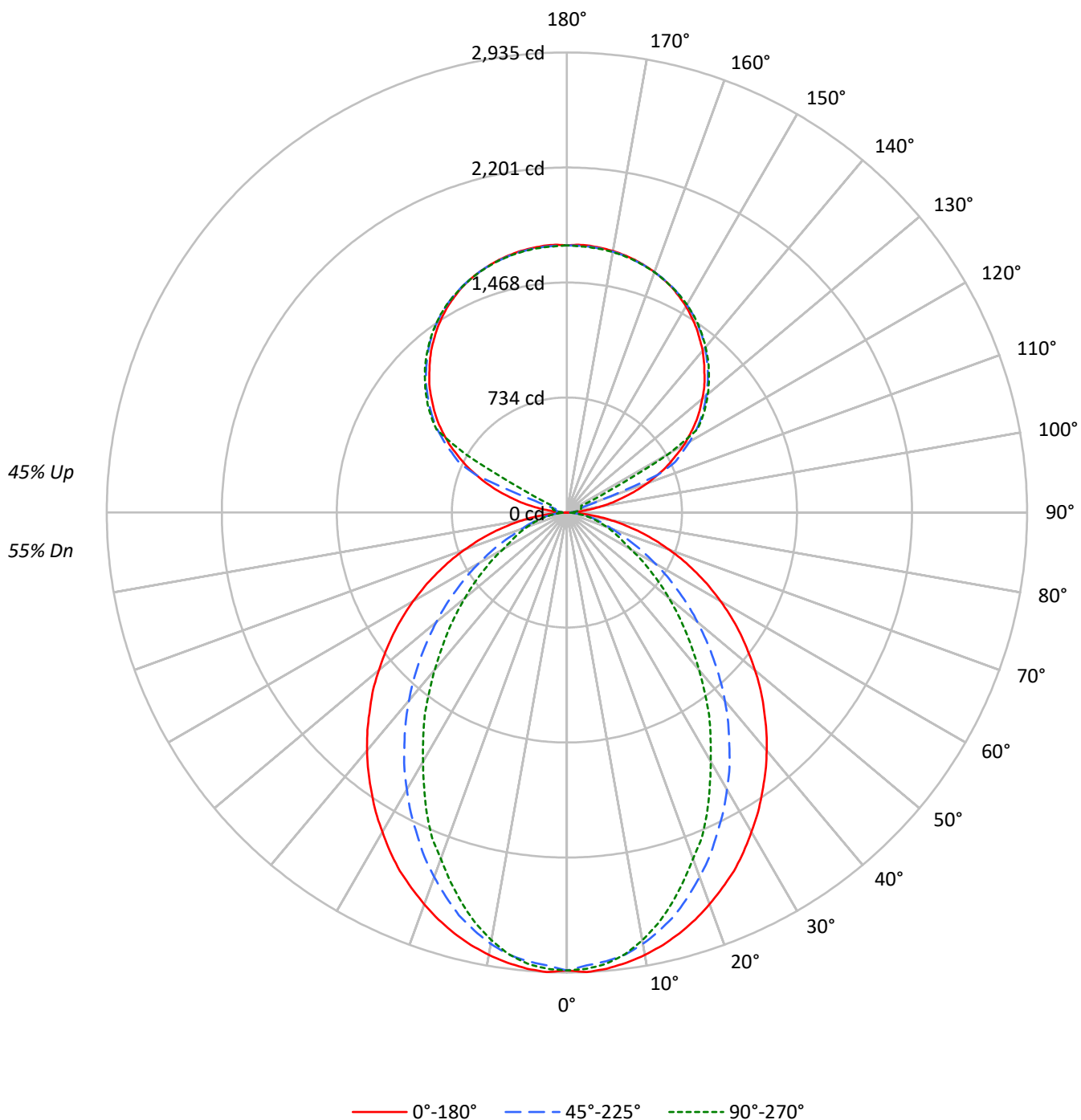
Lumens per Lamp: N/A
Luminaire Lumens: 11007.5 lumens
Efficiency: N/A
Efficacy: 104.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 105.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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	108	108	108	108	100	100	100	100	86	86	86	73	73	73	60	60	60
1	99	95	91	88	92	89	85	82	76	74	72	65	63	62	54	53	52
2	91	84	78	73	84	78	73	69	67	63	60	57	55	52	48	46	45
3	83	74	67	61	77	69	63	58	60	55	51	51	48	45	43	41	39
4	76	66	58	52	71	62	55	50	54	48	44	46	42	39	39	36	34
5	70	59	51	45	65	55	48	43	48	43	38	42	37	34	35	32	30
6	65	53	45	40	60	50	43	38	44	38	34	38	33	30	32	29	26
7	60	48	40	35	56	45	38	33	40	34	30	35	30	27	30	26	24
8	56	44	36	31	52	41	34	30	36	31	27	32	27	24	27	24	21
9	52	40	33	28	49	38	31	27	34	28	24	29	25	22	25	22	19
10	49	37	30	25	46	35	28	24	31	26	22	27	23	20	24	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3384	3384	3384
5°	3388	3328	3350
10°	3353	3261	3239
15°	3305	3151	3069
20°	3243	3000	2861
25°	3179	2831	2660
30°	3093	2659	2405
35°	3009	2473	2182
40°	2924	2282	1926
45°	2825	2070	1694
50°	2722	1855	1468
55°	2614	1627	1251
60°	2490	1389	1028
65°	2347	1147	923
70°	2173	921	832
75°	1955	807	753
80°	1638	669	647
85°	1119	436	476

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2825 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	273.8	2.5
10°-20°	751.7	6.8
20°-30°	1055.3	9.6
30°-40°	1150.4	10.5
40°-50°	1057.3	9.6
50°-60°	830.4	7.5
60°-70°	540.5	4.9
70°-80°	278.2	2.5
80°-90°	74.0	0.7
90°-100°	56.2	0.5
100°-110°	209.5	1.9
110°-120°	555.6	5.0
120°-130°	921.4	8.4
130°-140°	978.8	8.9
140°-150°	909.7	8.3
150°-160°	731.3	6.6
160°-170°	471.2	4.3
170°-180°	162.2	1.5
0°-30°	2080.9	18.9
0°-40°	3231.2	29.4
0°-60°	5118.9	46.5
0°-90°	6011.6	54.6
90°-120°	821.2	7.5
90°-150°	3631.1	33.0
90°-180°	4996.0	45.4
0°-180°	11007.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2922	2922	2922	2922	2922	
5°	2922	2908	2874	2898	2890	277
15°	2779	2750	2660	2610	2583	783
25°	2522	2438	2263	2155	2115	1160
35°	2173	2038	1806	1639	1581	1360
45°	1777	1600	1322	1134	1071	1372
55°	1351	1145	859	701	651	1207
65°	912	698	460	370	362	904
75°	486	301	212	193	190	515
85°	114	58	50	50	50	130
90°	1	15	25	31	33	10
95°	80	39	48	54	53	95
105°	375	412	75	89	94	401
115°	709	730	761	190	101	698
125°	1002	1019	1042	1051	1054	894
135°	1240	1260	1271	1284	1281	958
145°	1439	1438	1459	1467	1461	900
155°	1584	1574	1588	1596	1586	730
165°	1670	1662	1666	1674	1666	472
175°	1708	1699	1702	1710	1698	163
180°	1704	1704	1704	1704	1704	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2921.6	2921.6	2921.6	2921.6	2921.6
2.5°	2934.8	2921.6	2892.5	2919.1	2913.8
5°	2921.6	2908.4	2874.0	2897.8	2889.9
7.5°	2897.8	2882.1	2845.1	2855.4	2842.3
10°	2866.1	2847.6	2794.8	2786.7	2771.0
12.5°	2826.5	2802.7	2731.2	2715.4	2686.2
15°	2778.8	2749.7	2659.9	2609.7	2583.3
17.5°	2723.3	2681.0	2569.9	2511.7	2469.4
20°	2659.9	2606.9	2474.8	2408.8	2350.5
22.5°	2591.2	2530.3	2376.8	2287.0	2247.6
25°	2522.4	2437.7	2263.2	2155.0	2115.2
27.5°	2440.5	2350.5	2157.5	2033.3	1972.4
30°	2353.3	2252.6	2041.0	1906.4	1834.9
32.5°	2268.6	2146.9	1930.3	1771.5	1705.3
35°	2173.4	2038.5	1806.0	1639.4	1581.0
37.5°	2080.9	1935.3	1689.6	1506.9	1441.1
40°	1983.0	1824.5	1567.8	1380.2	1311.4
42.5°	1882.6	1713.4	1446.3	1250.5	1184.7
45°	1776.9	1599.5	1322.1	1134.2	1070.8
47.5°	1676.4	1488.7	1203.2	1015.2	957.2
50°	1565.3	1377.7	1086.7	904.1	848.9
52.5°	1456.7	1258.4	975.6	801.1	750.9
55°	1351.0	1144.8	859.2	700.7	650.6
57.5°	1242.7	1031.2	756.3	608.1	565.8
60°	1131.7	920.1	647.7	513.1	470.7
62.5°	1023.3	811.8	555.1	428.4	407.3
65°	912.2	697.9	460.1	370.3	362.1
67.5°	806.5	592.2	370.3	325.1	317.3
70°	695.4	489.2	306.6	280.2	269.5
72.5°	589.7	393.8	256.4	235.4	230.0
75°	486.5	301.2	211.5	193.0	190.5
77.5°	383.4	214.0	166.6	155.9	150.7
80°	288.1	153.4	126.8	116.4	116.4
82.5°	200.9	103.2	87.3	81.9	81.9
85°	113.6	58.1	50.2	50.2	50.2
87.5°	42.3	21.0	21.0	18.5	18.5
90°	1.2	14.7	24.6	30.9	33.2
92.5°	30.9	26.0	29.6	32.1	33.2
95°	80.1	39.4	48.1	54.3	53.0
97.5°	144.2	43.2	62.8	66.7	67.8
100°	218.3	49.4	70.3	80.1	82.6
102.5°	299.6	297.2	72.8	86.2	90.1
105°	374.9	411.9	75.2	88.8	93.7
107.5°	462.4	493.1	77.8	91.2	96.2
110°	546.3	572.1	215.8	92.5	97.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	625.2	647.3	626.4	94.9	98.7
115°	709.0	729.9	760.8	190.0	101.2
117.5°	781.7	806.4	827.5	651.0	328.0
120°	863.1	881.6	903.8	918.7	752.1
122.5°	932.1	951.9	976.6	984.0	985.3
125°	1002.4	1018.6	1042.0	1050.6	1054.3
127.5°	1066.5	1083.8	1102.5	1114.7	1115.9
130°	1127.0	1146.8	1160.2	1173.9	1172.8
132.5°	1188.7	1204.8	1218.2	1229.4	1228.2
135°	1240.5	1260.3	1271.2	1283.7	1281.2
137.5°	1294.6	1309.5	1321.9	1334.2	1330.6
140°	1347.7	1357.7	1371.1	1382.2	1376.1
142.5°	1392.2	1400.9	1416.8	1426.6	1420.5
145°	1439.1	1437.7	1458.6	1467.3	1461.2
147.5°	1479.7	1475.9	1496.9	1503.1	1498.2
150°	1519.1	1510.6	1530.2	1537.6	1531.5
152.5°	1552.4	1542.6	1561.1	1568.5	1559.8
155°	1584.5	1573.5	1588.2	1595.6	1585.8
157.5°	1610.3	1600.5	1611.6	1620.3	1610.3
160°	1632.6	1625.2	1632.6	1639.9	1631.3
162.5°	1652.2	1645.0	1651.0	1659.7	1648.6
165°	1669.5	1662.2	1665.9	1674.5	1665.9
167.5°	1683.1	1675.7	1679.5	1688.1	1677.0
170°	1694.3	1686.8	1689.3	1697.9	1686.8
172.5°	1701.6	1694.3	1696.8	1705.4	1694.3
175°	1707.8	1699.1	1701.6	1710.2	1697.9
177.5°	1710.2	1701.6	1702.9	1711.5	1700.4
180°	1704.0	1704.0	1704.0	1704.0	1704.0

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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	11.76	12.63	12.68	13.57	14.77	7.74	8.60	8.66	9.54	10.75
	3H	13.43	14.21	14.37	15.16	16.39	8.92	9.70	9.86	10.65	11.88
	4H	14.04	14.77	14.99	15.72	16.96	9.37	10.11	10.32	11.06	12.30
	6H	14.46	15.13	15.42	16.09	17.34	9.69	10.37	10.65	11.32	12.58
	8H	14.58	15.22	15.55	16.20	17.45	9.78	10.42	10.75	11.40	12.65
	12H	14.64	15.25	15.61	16.22	17.49	9.82	10.44	10.80	11.40	12.68
4H	2H	11.78	12.52	12.74	13.47	14.71	8.33	9.07	9.29	10.02	11.26
	3H	13.61	14.22	14.57	15.20	16.45	9.68	10.29	10.65	11.27	12.53
	4H	14.29	14.85	15.27	15.83	17.10	10.23	10.78	11.20	11.76	13.04
	6H	14.80	15.28	15.79	16.28	17.56	10.64	11.12	11.63	12.12	13.40
	8H	14.98	15.42	15.96	16.41	17.70	10.77	11.22	11.76	12.21	13.50
	12H	15.07	15.47	16.07	16.48	17.77	10.83	11.24	11.84	12.24	13.54
8H	4H	14.26	14.71	15.25	15.70	16.99	10.50	10.95	11.49	11.94	13.23
	6H	14.82	15.19	15.84	16.22	17.51	11.02	11.39	12.03	12.42	13.71
	8H	15.03	15.36	16.06	16.38	17.69	11.21	11.53	12.23	12.55	13.86
	12H	15.17	15.45	16.19	16.47	17.82	11.32	11.61	12.35	12.62	13.98
12H	4H	14.22	14.62	15.22	15.63	16.92	10.51	10.91	11.52	11.92	13.22
	6H	14.80	15.12	15.82	16.14	17.45	11.07	11.39	12.09	12.41	13.72
	8H	15.01	15.30	16.04	16.32	17.67	11.27	11.56	12.30	12.57	13.93