

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: P921739

Luminaire Tested: DFN2DIP-HX3F0-080D040US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921739
REPORT IS A COMBINATION OF REPORTS P900745 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-080D040US940-FLLONL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

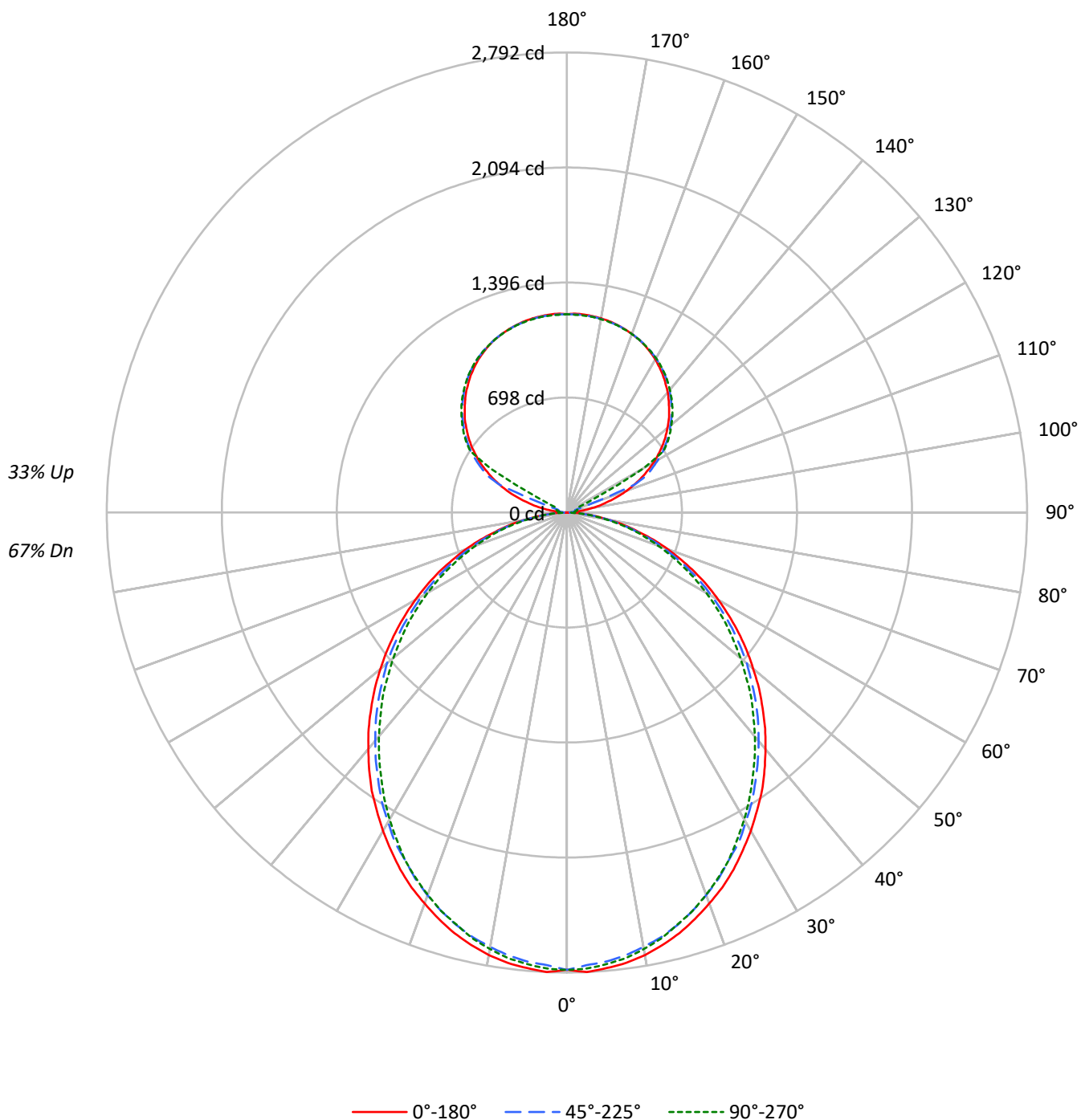
Lumens per Lamp: N/A
Luminaire Lumens: 10593.5 lumens
Efficiency: N/A
Efficacy: 96.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 109.7
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	111	111	111	111	105	105	105	105	93	93	93	82	82	82	71	71	71
1	102	97	93	90	95	92	88	85	81	79	76	72	70	68	63	62	60
2	92	85	79	73	87	80	75	70	71	67	63	63	60	57	56	53	51
3	84	75	67	61	79	71	64	58	63	58	53	56	52	48	49	46	43
4	77	66	58	52	72	63	55	50	56	50	45	50	45	41	44	40	37
5	71	59	51	44	67	56	48	43	50	44	39	45	40	36	40	36	33
6	66	53	45	39	62	50	43	37	45	39	34	41	35	32	36	32	29
7	61	48	40	34	57	46	38	33	41	35	30	37	32	28	33	29	26
8	56	44	36	30	53	42	34	29	38	31	27	34	29	25	30	26	23
9	53	40	32	27	50	38	31	26	35	29	24	31	26	23	28	24	21
10	49	37	29	24	46	35	28	24	32	26	22	29	24	20	26	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3215	3215	3215
5°	3219	3168	3190
10°	3191	3123	3145
15°	3143	3070	3076
20°	3078	2996	3005
25°	3014	2908	2924
30°	2933	2827	2820
35°	2856	2731	2711
40°	2763	2633	2607
45°	2669	2536	2500
50°	2566	2433	2377
55°	2459	2315	2263
60°	2337	2175	2133
65°	2204	2029	1979
70°	2035	1851	1813
75°	1801	1638	1658
80°	1519	1367	1365
85°	1077	904	886

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2669 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	261.3	2.5
10°-20°	735.1	6.9
20°-30°	1080.3	10.2
30°-40°	1254.7	11.8
40°-50°	1253.1	11.8
50°-60°	1092.7	10.3
60°-70°	807.7	7.6
70°-80°	457.0	4.3
80°-90°	122.7	1.2
90°-100°	39.7	0.4
100°-110°	148.0	1.4
110°-120°	392.4	3.7
120°-130°	650.9	6.1
130°-140°	691.4	6.5
140°-150°	642.6	6.1
150°-160°	516.6	4.9
160°-170°	332.9	3.1
170°-180°	114.6	1.1
0°-30°	2076.6	19.6
0°-40°	3331.3	31.4
0°-60°	5677.0	53.6
0°-90°	7064.5	66.7
90°-120°	580.1	5.5
90°-150°	2565.0	24.2
90°-180°	3529.0	33.3
0°-180°	10593.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2776	2776	2776	2776	2776	
5°	2776	2765	2736	2757	2752	263
15°	2642	2626	2592	2602	2589	744
25°	2392	2370	2325	2330	2325	1100
35°	2063	2037	1994	1978	1964	1288
45°	1679	1660	1620	1591	1580	1296
55°	1271	1254	1222	1190	1177	1136
65°	857	841	814	790	777	847
75°	448	443	430	414	419	479
85°	109	107	104	96	94	122
90°	1	10	17	22	24	10
95°	56	28	34	38	38	67
105°	265	291	53	63	66	283
115°	501	516	537	134	72	493
125°	708	720	736	742	745	632
135°	876	890	898	907	905	677
145°	1016	1016	1030	1036	1032	636
155°	1119	1112	1122	1127	1120	516
165°	1179	1174	1177	1183	1177	333
175°	1206	1200	1202	1208	1199	115
180°	1204	1204	1204	1204	1204	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2775.7	2775.7	2775.7	2775.7	2775.7
2.5°	2791.9	2778.6	2749.1	2775.7	2770.6
5°	2775.7	2765.3	2735.9	2757.1	2752.0
7.5°	2757.1	2741.2	2711.8	2733.3	2727.9
10°	2727.9	2709.2	2677.2	2698.4	2690.6
12.5°	2687.7	2671.8	2639.8	2653.1	2647.8
15°	2642.4	2626.5	2591.7	2602.5	2589.2
17.5°	2586.3	2570.4	2535.6	2549.0	2535.6
20°	2524.9	2509.0	2471.6	2479.6	2469.1
22.5°	2463.7	2439.6	2404.8	2404.8	2399.4
25°	2391.5	2370.3	2325.0	2330.0	2325.0
27.5°	2311.3	2292.7	2258.1	2250.1	2236.9
30°	2231.5	2209.9	2170.1	2162.1	2151.3
32.5°	2146.0	2130.1	2087.3	2071.2	2060.5
35°	2063.2	2036.7	1993.9	1977.7	1964.4
37.5°	1969.8	1945.7	1903.0	1884.3	1871.0
40°	1873.8	1852.3	1809.5	1785.7	1774.9
42.5°	1780.4	1758.8	1716.4	1689.4	1673.7
45°	1679.0	1660.3	1620.1	1590.9	1580.2
47.5°	1580.2	1561.5	1518.7	1489.2	1473.4
50°	1476.0	1462.7	1425.2	1387.9	1374.6
52.5°	1374.6	1355.8	1321.3	1291.9	1273.2
55°	1270.6	1254.5	1222.5	1190.5	1177.1
57.5°	1166.4	1153.2	1118.3	1086.3	1075.5
60°	1062.2	1051.8	1014.3	984.9	977.0
62.5°	960.8	942.2	915.5	888.9	878.2
65°	856.9	840.8	814.1	790.1	776.8
67.5°	750.1	736.6	712.7	694.1	683.3
70°	651.3	640.5	616.5	597.8	587.3
72.5°	549.9	539.2	525.8	507.2	499.3
75°	448.3	443.2	429.6	413.8	419.1
77.5°	357.7	346.9	341.5	333.6	325.7
80°	267.1	264.2	258.9	250.9	245.5
82.5°	181.6	181.6	179.0	168.2	168.2
85°	109.3	106.7	104.2	96.0	93.5
87.5°	48.2	42.8	37.4	29.4	26.7
90°	0.8	10.4	17.4	21.8	23.5
92.5°	21.8	18.3	20.9	22.6	23.5
95°	56.5	27.8	33.9	38.3	37.5
97.5°	101.9	30.5	44.4	47.1	47.9
100°	154.2	34.9	49.7	56.5	58.3
102.5°	211.6	210.0	51.4	60.9	63.6
105°	264.7	291.0	53.1	62.7	66.2
107.5°	326.6	348.4	54.9	64.5	67.9
110°	385.9	404.1	152.5	65.4	68.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	441.7	457.3	442.5	67.1	69.7
115°	500.8	515.6	537.4	134.1	71.5
117.5°	552.2	569.6	584.5	459.9	231.7
120°	609.8	622.8	638.5	649.0	531.4
122.5°	658.4	672.4	689.9	695.1	696.0
125°	708.1	719.5	736.0	742.2	744.8
127.5°	753.4	765.6	778.7	787.5	788.3
130°	796.1	810.1	819.6	829.2	828.4
132.5°	839.6	851.0	860.6	868.4	867.6
135°	876.3	890.3	898.0	906.8	905.1
137.5°	914.5	925.0	933.8	942.4	939.9
140°	952.0	959.0	968.6	976.4	972.1
142.5°	983.5	989.5	1000.9	1007.7	1003.4
145°	1016.5	1015.7	1030.4	1036.5	1032.2
147.5°	1045.2	1042.6	1057.4	1061.8	1058.4
150°	1073.1	1067.0	1081.0	1086.2	1081.8
152.5°	1096.6	1089.7	1102.7	1108.0	1101.9
155°	1119.3	1111.5	1121.9	1127.1	1120.2
157.5°	1137.6	1130.6	1138.5	1144.6	1137.6
160°	1153.2	1148.0	1153.2	1158.4	1152.4
162.5°	1167.2	1162.0	1166.4	1172.4	1164.6
165°	1179.4	1174.2	1176.8	1182.9	1176.8
167.5°	1189.0	1183.7	1186.4	1192.5	1184.6
170°	1196.9	1191.6	1193.3	1199.4	1191.6
172.5°	1202.0	1196.9	1198.6	1204.7	1196.9
175°	1206.3	1200.2	1202.0	1208.1	1199.4
177.5°	1208.1	1202.0	1202.9	1209.1	1201.2
180°	1203.8	1203.8	1203.8	1203.8	1203.8

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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	12.70	13.73	13.50	14.56	15.57	12.27	13.30	13.07	14.13	15.14
	3H	14.36	15.29	15.18	16.13	17.17	13.90	14.82	14.71	15.66	16.70
	4H	14.95	15.83	15.78	16.67	17.72	14.49	15.36	15.32	16.20	17.25
	6H	15.36	16.17	16.20	17.01	18.08	14.89	15.70	15.73	16.54	17.61
	8H	15.46	16.24	16.32	17.10	18.17	14.99	15.77	15.85	16.63	17.70
	12H	15.52	16.25	16.37	17.11	18.20	15.04	15.78	15.90	16.63	17.73
4H	2H	13.18	14.06	14.01	14.90	15.95	12.84	13.71	13.67	14.55	15.60
	3H	15.05	15.78	15.90	16.66	17.72	14.66	15.39	15.51	16.27	17.33
	4H	15.77	16.43	16.62	17.30	18.40	15.36	16.03	16.22	16.90	18.00
	6H	16.28	16.86	17.16	17.76	18.85	15.88	16.46	16.75	17.35	18.45
	8H	16.43	16.97	17.31	17.86	18.97	16.03	16.57	16.90	17.46	18.57
	12H	16.51	17.00	17.41	17.91	19.02	16.10	16.58	16.99	17.49	18.61
8H	4H	15.97	16.51	16.85	17.40	18.51	15.62	16.16	16.49	17.04	18.15
	6H	16.60	17.05	17.51	17.98	19.09	16.24	16.69	17.15	17.62	18.73
	8H	16.82	17.22	17.74	18.14	19.27	16.46	16.85	17.37	17.78	18.90
	12H	16.95	17.30	17.87	18.22	19.40	16.58	16.92	17.49	17.84	19.02
12H	4H	15.97	16.45	16.86	17.36	18.48	15.62	16.10	16.51	17.01	18.13
	6H	16.63	17.03	17.55	17.95	19.08	16.28	16.68	17.20	17.60	18.73
	8H	16.88	17.23	17.80	18.14	19.32	16.52	16.87	17.44	17.79	18.97