

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: P902596

Luminaire Tested: DFN2DIP-HX3F0-060D040US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902596
REPORT IS A COMBINATION OF REPORTS P899222 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-060D040US830-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

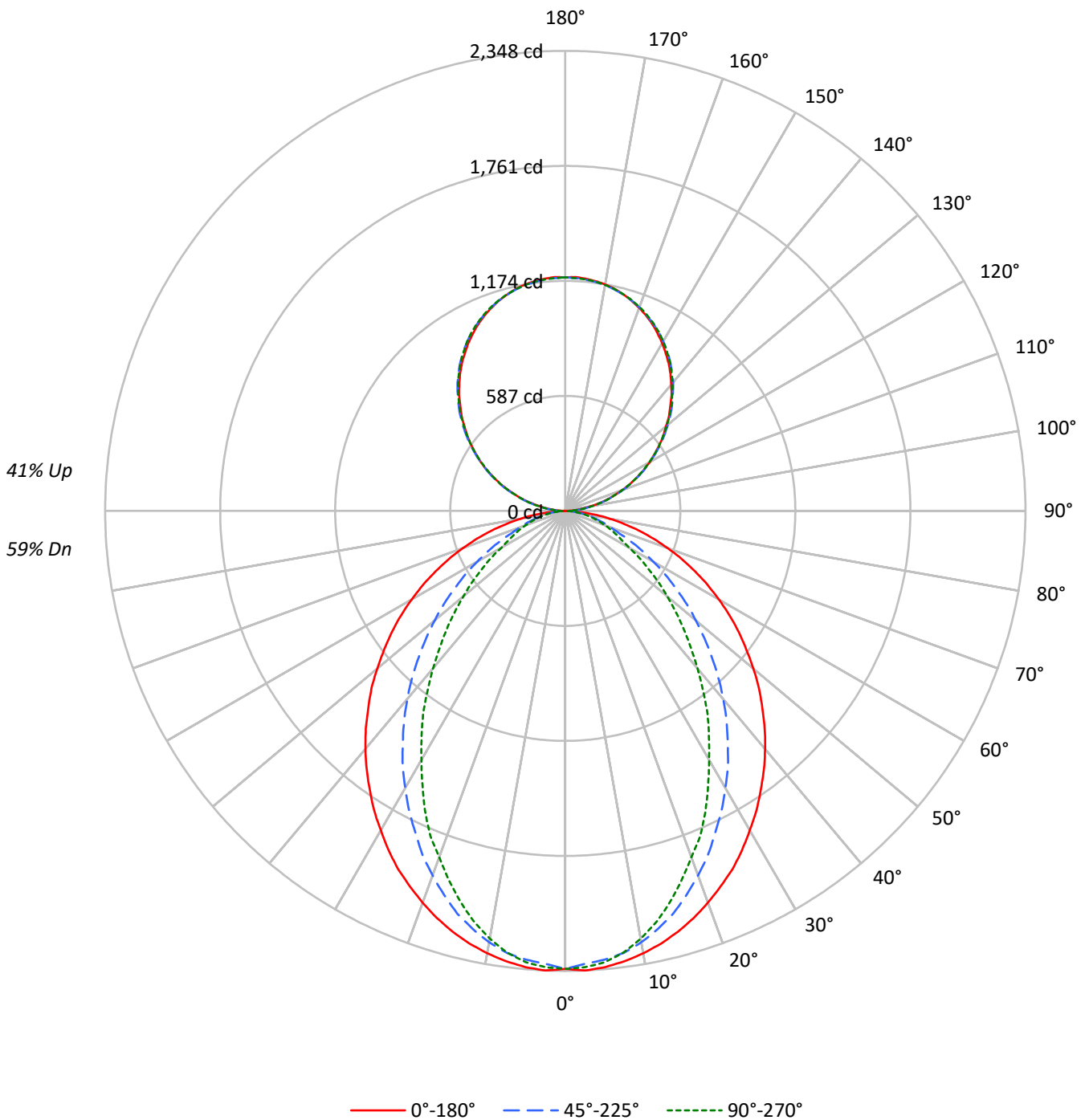
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8143.5 lumens
Efficiency: N/A
Efficacy: 94.3 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): 86.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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	109	109	109	109	102	102	102	102	88	88	88	76	76	76	64	64	64	59			59
1	100	96	92	89	94	90	87	84	78	76	74	68	66	64	58	57	56	51			51
2	92	85	79	74	86	79	74	70	69	65	62	60	57	55	52	50	48	44			44
3	84	75	68	62	78	70	64	59	62	57	53	54	50	47	46	44	41	38			38
4	77	67	59	53	72	63	56	51	55	50	46	48	44	41	42	39	36	33			33
5	71	60	52	46	66	56	49	44	50	44	40	44	39	36	38	34	32	29			29
6	66	54	46	40	61	51	44	39	45	39	35	40	35	32	35	31	28	26			26
7	61	49	41	36	57	46	39	34	41	35	31	36	32	28	32	28	25	23			23
8	57	45	37	32	53	42	35	30	38	32	28	33	29	25	29	26	23	21			21
9	53	41	34	29	50	39	32	27	35	29	25	31	26	23	27	24	21	19			19
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	25	22	19	17			17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2707	2707	2707
5°	2711	2663	2680
10°	2682	2609	2591
15°	2644	2520	2455
20°	2594	2400	2289
25°	2543	2265	2128
30°	2474	2127	1924
35°	2407	1979	1745
40°	2339	1825	1541
45°	2259	1656	1355
50°	2178	1484	1174
55°	2092	1302	1001
60°	1992	1111	822
65°	1877	917	738
70°	1738	736	666
75°	1564	645	603
80°	1311	535	518
85°	896	349	381

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2259 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	219.1	2.7
10°-20°	601.3	7.4
20°-30°	844.3	10.4
30°-40°	920.3	11.3
40°-50°	845.9	10.4
50°-60°	664.3	8.2
60°-70°	432.4	5.3
70°-80°	222.6	2.7
80°-90°	60.2	0.7
90°-100°	73.8	0.9
100°-110°	234.4	2.9
110°-120°	401.2	4.9
120°-130°	527.6	6.5
130°-140°	592.2	7.3
140°-150°	580.8	7.1
150°-160°	487.2	6.0
160°-170°	323.1	4.0
170°-180°	112.9	1.4
0°-30°	1664.7	20.4
0°-40°	2585.0	31.7
0°-60°	4095.1	50.3
0°-90°	4810.3	59.1
90°-120°	709.4	8.7
90°-150°	2410.0	29.6
90°-180°	3333.0	40.9
0°-180°	8143.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2337	2337	2337	2337	2337	
5°	2337	2327	2299	2318	2312	222
15°	2223	2200	2128	2088	2067	626
25°	2018	1950	1811	1724	1692	928
35°	1739	1631	1445	1312	1265	1088
45°	1421	1280	1058	907	857	1098
55°	1081	916	687	561	520	966
65°	730	558	368	296	290	724
75°	389	241	169	154	152	412
85°	91	46	40	40	40	104
90°	1	13	35	33	34	8
95°	52	63	64	64	63	58
105°	216	219	221	223	223	228
115°	403	408	406	406	403	398
125°	586	595	592	588	587	523
135°	757	768	771	770	767	585
145°	920	927	932	934	930	575
155°	1051	1054	1058	1063	1059	484
165°	1144	1143	1143	1150	1145	323
175°	1190	1187	1185	1192	1186	113
180°	1192	1192	1192	1192	1192	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2337.3	2337.3	2337.3	2337.3	2337.3
2.5°	2347.9	2337.3	2313.9	2335.2	2331.0
5°	2337.3	2326.8	2299.1	2318.3	2312.0
7.5°	2318.3	2305.6	2276.1	2284.3	2273.8
10°	2292.8	2278.0	2235.9	2229.4	2216.8
12.5°	2261.3	2242.1	2184.9	2172.4	2149.0
15°	2223.1	2199.7	2127.9	2087.7	2066.6
17.5°	2178.7	2144.8	2055.9	2009.4	1975.6
20°	2127.9	2085.5	1979.8	1927.0	1880.4
22.5°	2072.9	2024.2	1901.5	1829.7	1798.0
25°	2018.0	1950.2	1810.6	1724.0	1692.1
27.5°	1952.5	1880.4	1726.0	1626.5	1577.9
30°	1882.6	1802.0	1632.9	1525.1	1467.9
32.5°	1814.9	1717.5	1544.3	1417.2	1364.2
35°	1738.8	1630.9	1444.8	1311.5	1264.8
37.5°	1664.7	1548.2	1351.7	1205.6	1152.8
40°	1586.4	1459.6	1254.2	1104.1	1049.1
42.5°	1506.1	1370.7	1157.1	1000.4	947.7
45°	1421.4	1279.6	1057.7	907.3	856.6
47.5°	1341.1	1191.0	962.5	812.2	765.7
50°	1252.3	1102.1	869.4	723.3	679.1
52.5°	1165.4	1006.7	780.5	640.9	600.8
55°	1080.8	915.9	687.4	560.6	520.4
57.5°	994.2	824.9	605.0	486.5	452.6
60°	905.3	736.1	518.2	410.5	376.5
62.5°	818.7	649.5	444.1	342.7	325.8
65°	729.8	558.4	368.1	296.2	289.7
67.5°	645.2	473.7	296.2	260.1	253.8
70°	556.3	391.3	245.2	224.2	215.7
72.5°	471.7	315.1	205.1	188.3	184.0
75°	389.2	241.0	169.2	154.4	152.4
77.5°	306.8	171.3	133.3	124.8	120.6
80°	230.5	122.7	101.4	93.1	93.1
82.5°	160.7	82.6	69.7	65.5	65.5
85°	90.9	46.5	40.2	40.2	40.2
87.5°	33.9	16.9	16.9	14.8	14.8
90°	1.0	12.9	35.3	33.1	34.1
92.5°	22.2	30.2	31.3	32.3	32.3
95°	52.5	62.6	64.4	64.4	62.6
97.5°	87.4	96.7	100.7	100.7	100.7
100°	127.6	135.9	138.7	138.7	137.7
102.5°	170.0	176.2	180.1	181.2	180.1
105°	216.4	219.2	221.4	223.2	223.2
107.5°	262.4	266.7	266.7	267.4	262.4
110°	307.0	312.7	312.7	312.7	309.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	355.1	361.3	360.1	357.3	355.1
115°	402.6	408.4	406.5	405.5	402.6
117.5°	449.7	457.6	452.6	449.7	446.9
120°	497.2	505.0	497.2	497.2	493.9
122.5°	540.3	550.4	545.4	542.4	540.3
125°	585.6	594.6	591.7	588.4	587.4
127.5°	629.8	640.9	637.0	632.6	629.8
130°	671.1	684.1	682.3	680.1	676.2
132.5°	717.5	727.5	728.3	723.2	720.4
135°	757.4	768.5	770.7	769.6	766.8
137.5°	802.0	811.0	812.8	812.0	807.8
140°	841.1	850.2	855.2	855.2	851.2
142.5°	881.5	890.4	893.2	894.4	890.4
145°	919.5	926.7	932.5	933.6	929.6
147.5°	953.7	962.6	967.0	968.7	964.8
150°	988.9	995.0	999.0	1002.2	999.0
152.5°	1020.2	1026.2	1031.3	1035.3	1031.3
155°	1051.4	1054.3	1057.5	1062.6	1059.3
157.5°	1078.5	1080.5	1082.3	1089.6	1084.5
160°	1102.5	1104.7	1105.7	1111.8	1107.5
162.5°	1124.7	1124.7	1125.9	1132.7	1127.7
165°	1143.9	1142.7	1142.7	1149.9	1144.9
167.5°	1161.1	1157.8	1157.8	1165.1	1160.0
170°	1174.0	1171.1	1170.1	1177.2	1171.1
172.5°	1183.0	1180.2	1179.0	1186.3	1180.2
175°	1190.2	1187.3	1185.2	1192.3	1186.3
177.5°	1194.2	1191.3	1189.1	1195.2	1189.1
180°	1192.3	1192.3	1192.3	1192.3	1192.3



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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	11.37	12.28	12.25	13.18	14.32	7.35	8.26	8.23	9.15	10.29
	3H	13.05	13.86	13.94	14.77	15.93	8.54	9.35	9.43	10.26	11.42
	4H	13.65	14.42	14.56	15.33	16.51	8.99	9.76	9.90	10.67	11.84
	6H	14.07	14.78	14.99	15.70	16.89	9.31	10.02	10.23	10.94	12.12
	8H	14.20	14.87	15.13	15.81	16.99	9.40	10.07	10.33	11.01	12.19
	12H	14.26	14.90	15.19	15.83	17.04	9.44	10.08	10.38	11.01	12.22
4H	2H	11.40	12.17	12.31	13.08	14.25	7.95	8.72	8.86	9.63	10.80
	3H	13.22	13.86	14.15	14.81	16.00	9.30	9.94	10.22	10.88	12.07
	4H	13.91	14.50	14.85	15.43	16.65	9.85	10.43	10.78	11.37	12.58
	6H	14.43	14.93	15.38	15.89	17.10	10.27	10.77	11.21	11.73	12.94
	8H	14.60	15.07	15.55	16.02	17.25	10.39	10.86	11.34	11.82	13.04
	12H	14.69	15.11	15.66	16.09	17.32	10.46	10.88	11.43	11.85	13.09
8H	4H	13.89	14.35	14.84	15.31	16.54	10.13	10.60	11.08	11.55	12.78
	6H	14.45	14.83	15.42	15.83	17.06	10.64	11.03	11.62	12.03	13.25
	8H	14.66	15.00	15.64	15.99	17.23	10.83	11.17	11.82	12.16	13.40
	12H	14.80	15.10	15.78	16.08	17.37	10.95	11.25	11.94	12.23	13.52
12H	4H	13.84	14.26	14.81	15.24	16.47	10.14	10.56	11.11	11.53	12.76
	6H	14.42	14.76	15.41	15.75	17.00	10.69	11.03	11.68	12.02	13.26
	8H	14.64	14.94	15.63	15.92	17.21	10.90	11.20	11.89	12.18	13.47