

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: P924468

Luminaire Tested: DFN2DIP-HX3F0-080D040US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924468
REPORT IS A COMBINATION OF REPORTS P899226 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-080D040US950-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

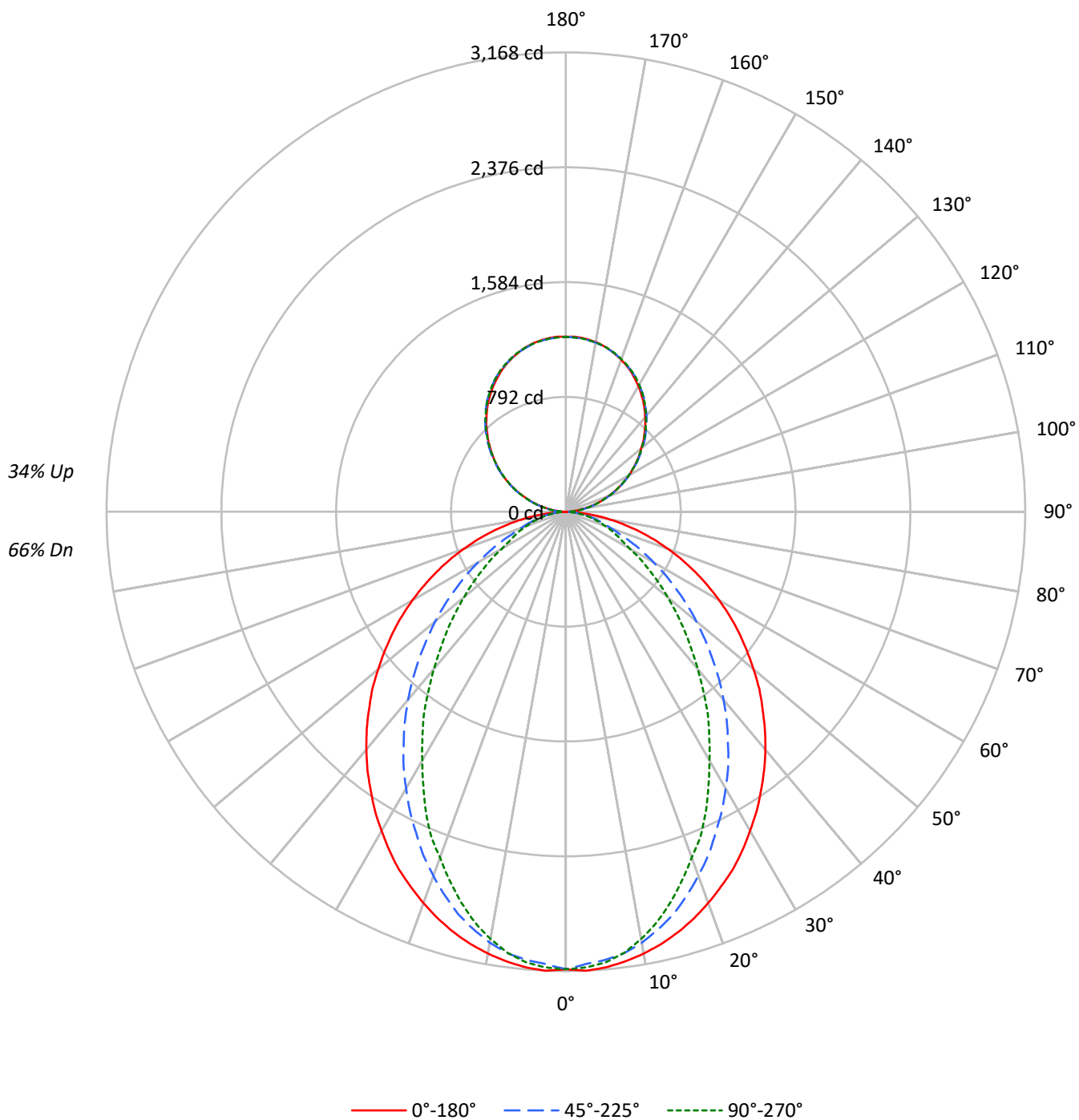
Lumens per Lamp: N/A
Luminaire Lumens: 9864.4 lumens
Efficiency: N/A
Efficacy: 89.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Direct

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
RCR																	
0	111	111	111	111	104	104	104	104	92	92	92		81	81	81		71
1	102	98	94	91	96	92	89	86	82	79	77		72	70	69		63
2	93	86	80	75	88	81	76	72	72	68	65		64	61	58		57
3	86	76	69	63	80	72	66	61	65	59	55		57	53	50		51
4	79	68	60	54	74	65	58	52	58	52	48		52	47	44		46
5	73	61	53	47	68	58	51	45	52	46	42		47	42	38		42
6	67	55	47	41	63	52	45	40	47	41	37		42	38	34		38
7	62	50	42	37	59	48	40	35	43	37	33		39	34	30		35
8	58	46	38	33	55	44	37	32	40	34	29		36	31	27		32
9	54	42	35	29	51	40	33	29	36	31	27		33	28	25		30
10	51	39	31	27	48	37	30	26	34	28	24		31	26	23		28

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3654	3654	3654
5°	3658	3593	3617
10°	3620	3520	3497
15°	3569	3401	3313
20°	3501	3239	3088
25°	3432	3057	2871
30°	3339	2870	2597
35°	3249	2670	2356
40°	3157	2463	2079
45°	3049	2234	1829
50°	2938	2003	1585
55°	2823	1757	1350
60°	2688	1499	1110
65°	2534	1238	996
70°	2346	994	899
75°	2110	871	814
80°	1768	723	698
85°	1209	470	513

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3049 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	295.6	3.0
10°-20°	811.5	8.2
20°-30°	1139.4	11.6
30°-40°	1242.0	12.6
40°-50°	1141.5	11.6
50°-60°	896.5	9.1
60°-70°	583.5	5.9
70°-80°	300.4	3.0
80°-90°	80.1	0.8
90°-100°	74.7	0.8
100°-110°	237.3	2.4
110°-120°	406.1	4.1
120°-130°	534.0	5.4
130°-140°	599.4	6.1
140°-150°	587.8	6.0
150°-160°	493.1	5.0
160°-170°	327.0	3.3
170°-180°	114.3	1.2
0°-30°	2246.6	22.8
0°-40°	3488.6	35.4
0°-60°	5526.6	56.0
0°-90°	6490.6	65.8
90°-120°	718.0	7.3
90°-150°	2439.3	24.7
90°-180°	3374.0	34.2
0°-180°	9864.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3154	3154	3154	3154	3154	
5°	3154	3140	3103	3128	3120	299
15°	3000	2969	2872	2818	2789	845
25°	2723	2632	2444	2327	2284	1252
35°	2347	2201	1950	1770	1707	1469
45°	1918	1727	1427	1224	1156	1481
55°	1459	1236	928	756	702	1303
65°	985	754	497	400	391	976
75°	525	325	228	208	206	555
85°	123	63	54	54	54	141
90°	1	13	36	34	34	10
95°	53	63	65	65	63	59
105°	219	222	224	226	226	231
115°	408	413	412	410	408	403
125°	593	602	599	596	594	530
135°	767	778	780	779	776	593
145°	931	938	944	945	941	582
155°	1064	1067	1070	1076	1072	490
165°	1158	1157	1157	1164	1159	327
175°	1205	1202	1200	1207	1201	114
180°	1207	1207	1207	1207	1207	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3154.3	3154.3	3154.3	3154.3	3154.3
2.5°	3168.5	3154.3	3122.8	3151.5	3145.8
5°	3154.3	3140.1	3102.8	3128.5	3120.1
7.5°	3128.5	3111.6	3071.6	3082.9	3068.5
10°	3094.3	3074.4	3017.4	3008.6	2991.6
12.5°	3051.7	3025.9	2948.6	2931.6	2900.2
15°	3000.1	2968.7	2871.7	2817.5	2789.0
17.5°	2940.1	2894.4	2774.5	2711.8	2666.0
20°	2871.7	2814.5	2671.9	2600.7	2537.6
22.5°	2797.5	2731.8	2566.2	2469.2	2426.5
25°	2723.3	2631.9	2443.5	2326.6	2283.6
27.5°	2634.9	2537.6	2329.3	2195.2	2129.4
30°	2540.7	2431.9	2203.6	2058.3	1981.0
32.5°	2449.2	2317.8	2084.0	1912.6	1841.1
35°	2346.6	2200.9	1949.8	1770.0	1706.9
37.5°	2246.6	2089.5	1824.1	1627.0	1555.8
40°	2141.0	1969.8	1692.7	1490.1	1415.8
42.5°	2032.5	1849.9	1561.5	1350.2	1278.9
45°	1918.3	1726.9	1427.4	1224.5	1156.1
47.5°	1809.9	1607.3	1299.0	1096.1	1033.4
50°	1689.9	1487.4	1173.3	976.1	916.4
52.5°	1572.8	1358.6	1053.3	865.0	810.8
55°	1458.6	1236.0	927.7	756.5	702.3
57.5°	1341.7	1113.3	816.5	656.6	610.8
60°	1221.7	993.4	699.3	553.9	508.2
62.5°	1104.8	876.4	599.4	462.5	439.8
65°	984.9	753.5	496.7	399.8	390.9
67.5°	870.7	639.4	399.8	351.0	342.6
70°	750.8	528.2	331.0	302.5	291.1
72.5°	636.6	425.2	276.9	254.1	248.3
75°	525.2	325.3	228.4	208.4	205.7
77.5°	414.0	231.1	179.9	168.4	162.7
80°	311.0	165.7	136.9	125.6	125.6
82.5°	216.8	111.4	94.2	88.4	88.4
85°	122.7	62.7	54.2	54.2	54.2
87.5°	45.7	22.7	22.7	20.0	20.0
90°	1.0	13.1	35.7	33.5	34.5
92.5°	22.5	30.5	31.7	32.7	32.7
95°	53.1	63.3	65.2	65.2	63.3
97.5°	88.4	97.9	101.9	101.9	101.9
100°	129.2	137.6	140.4	140.4	139.4
102.5°	172.1	178.3	182.3	183.4	182.3
105°	219.0	221.9	224.1	225.9	225.9
107.5°	265.6	270.0	270.0	270.6	265.6
110°	310.7	316.5	316.5	316.5	313.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	359.5	365.7	364.5	361.7	359.5
115°	407.5	413.4	411.5	410.4	407.5
117.5°	455.2	463.2	458.1	455.2	452.3
120°	503.2	511.2	503.2	503.2	499.9
122.5°	546.8	557.0	552.0	549.0	546.8
125°	592.7	601.8	598.9	595.6	594.5
127.5°	637.5	648.7	644.7	640.3	637.5
130°	679.2	692.4	690.6	688.4	684.4
132.5°	726.2	736.4	737.2	732.0	729.1
135°	766.6	777.9	780.1	778.9	776.1
137.5°	811.8	820.8	822.6	821.9	817.6
140°	851.3	860.5	865.6	865.6	861.6
142.5°	892.2	901.2	904.1	905.3	901.2
145°	930.7	938.0	943.8	944.9	940.9
147.5°	965.3	974.3	978.7	980.5	976.5
150°	1000.9	1007.1	1011.1	1014.4	1011.1
152.5°	1032.6	1038.7	1043.9	1047.9	1043.9
155°	1064.2	1067.1	1070.4	1075.5	1072.2
157.5°	1091.6	1093.7	1095.5	1102.8	1097.7
160°	1115.9	1118.1	1119.1	1125.3	1121.0
162.5°	1138.4	1138.4	1139.6	1146.4	1141.4
165°	1157.8	1156.6	1156.6	1163.9	1158.8
167.5°	1175.2	1171.9	1171.9	1179.2	1174.1
170°	1188.3	1185.3	1184.3	1191.5	1185.3
172.5°	1197.4	1194.5	1193.4	1200.7	1194.5
175°	1204.7	1201.8	1199.6	1206.8	1200.7
177.5°	1208.7	1205.8	1203.6	1209.8	1203.6
180°	1206.8	1206.8	1206.8	1206.8	1206.8

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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	12.97	13.94	13.78	14.78	15.81	8.94	9.92	9.76	10.75	11.78
	3H	14.65	15.52	15.48	16.36	17.42	10.14	11.01	10.97	11.86	12.91
	4H	15.26	16.08	16.10	16.93	18.00	10.59	11.42	11.44	12.27	13.34
	6H	15.68	16.44	16.54	17.30	18.38	10.92	11.68	11.77	12.53	13.62
	8H	15.81	16.53	16.67	17.41	18.49	11.01	11.73	11.88	12.61	13.69
	12H	15.87	16.56	16.74	17.43	18.53	11.05	11.74	11.93	12.61	13.72
4H	2H	13.00	13.83	13.85	14.68	15.74	9.55	10.38	10.40	11.23	12.29
	3H	14.83	15.52	15.70	16.40	17.49	10.91	11.59	11.77	12.48	13.56
	4H	15.53	16.15	16.40	17.03	18.14	11.46	12.08	12.33	12.96	14.07
	6H	16.04	16.58	16.93	17.48	18.60	11.88	12.42	12.77	13.32	14.44
	8H	16.22	16.72	17.11	17.62	18.74	12.01	12.51	12.90	13.41	14.54
	12H	16.31	16.76	17.22	17.68	18.81	12.08	12.53	12.99	13.45	14.58
8H	4H	15.50	16.01	16.40	16.90	18.03	11.75	12.25	12.64	13.15	14.27
	6H	16.07	16.48	16.99	17.42	18.55	12.26	12.68	13.18	13.62	14.74
	8H	16.28	16.65	17.21	17.58	18.72	12.45	12.82	13.38	13.75	14.89
	12H	16.42	16.74	17.35	17.67	18.86	12.57	12.90	13.50	13.82	15.02
12H	4H	15.46	15.91	16.37	16.83	17.96	11.76	12.21	12.67	13.13	14.26
	6H	16.04	16.41	16.97	17.34	18.49	12.31	12.68	13.24	13.61	14.75
	8H	16.26	16.59	17.20	17.51	18.71	12.52	12.85	13.45	13.77	14.97