

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: P924444

Luminaire Tested: DFN2DIP-HX3F0-070D040US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924444
REPORT IS A COMBINATION OF REPORTS P899224 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-070D040US950-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

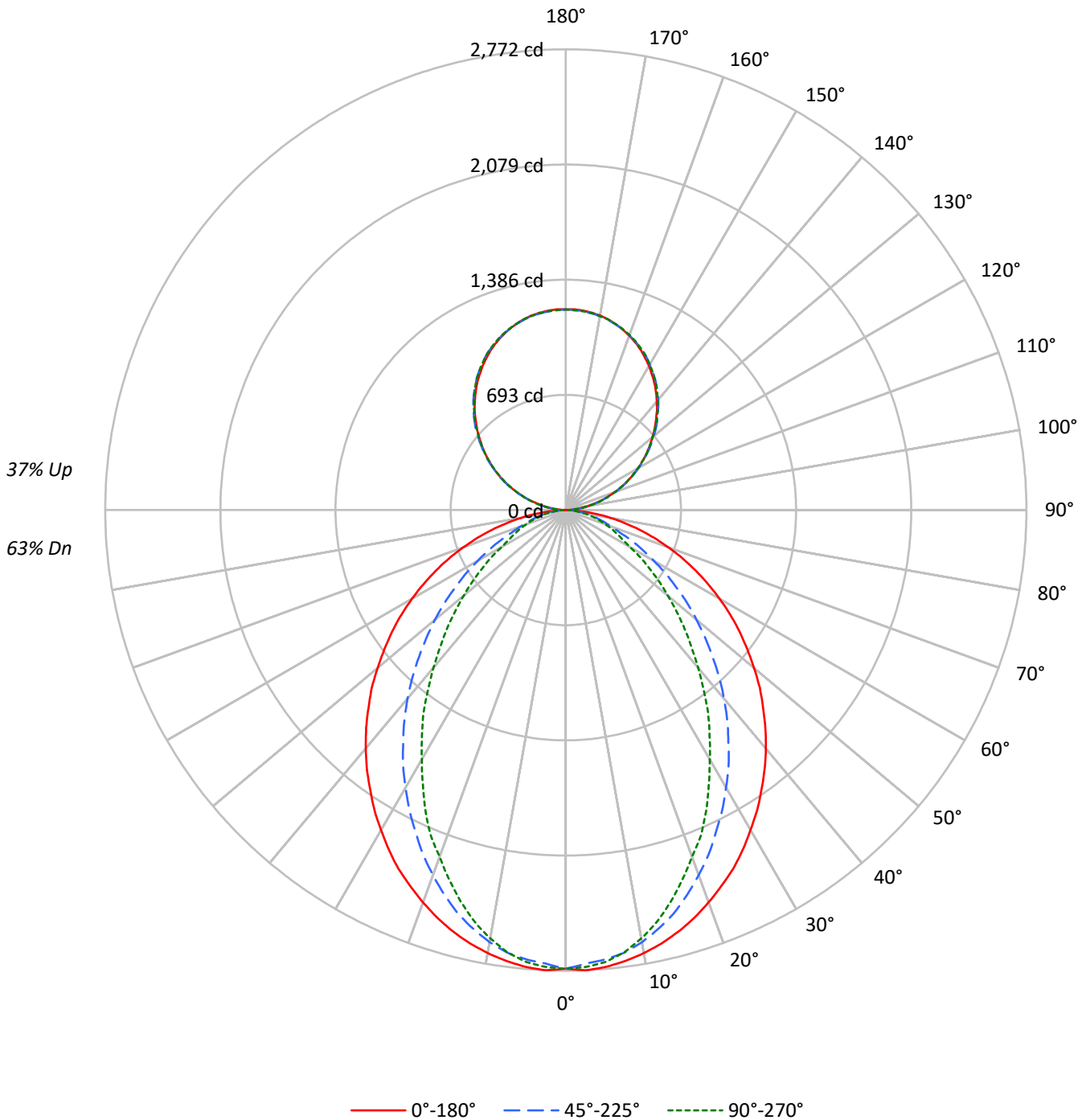
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9053.4 lumens
Efficiency: N/A
Efficacy: 91.5 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): 98.9
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			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	90	90	90	79	79	79	68	68	68	68	68	68	63
1	101	97	93	90	95	91	88	85	80	78	76	70	68	67	61	60	58	58	58	58	54
2	93	85	80	75	87	80	75	71	71	67	64	62	59	57	54	52	50	50	50	50	46
3	85	76	69	63	79	71	65	60	63	58	54	56	52	49	49	46	43	43	43	43	40
4	78	67	60	54	73	64	57	51	57	51	47	50	46	42	44	41	38	38	38	38	35
5	72	61	53	47	67	57	50	45	51	45	41	45	41	37	40	36	33	33	33	33	31
6	67	55	47	41	62	52	44	39	46	40	36	41	36	33	36	33	30	30	30	30	27
7	62	50	42	36	58	47	40	35	42	36	32	38	33	29	33	30	27	27	27	27	24
8	57	45	38	32	54	43	36	31	39	33	29	35	30	26	31	27	24	24	24	24	22
9	54	42	34	29	50	40	33	28	36	30	26	32	27	24	29	25	22	22	22	22	20
10	50	38	31	26	47	36	30	25	33	27	24	30	25	22	27	23	20	20	20	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3197	3197	3197
5°	3201	3144	3165
10°	3168	3080	3060
15°	3123	2976	2899
20°	3063	2834	2702
25°	3003	2675	2513
30°	2922	2511	2272
35°	2843	2336	2061
40°	2762	2155	1820
45°	2668	1955	1601
50°	2571	1753	1387
55°	2470	1537	1182
60°	2352	1312	971
65°	2217	1083	872
70°	2053	870	786
75°	1846	762	712
80°	1548	632	612
85°	1057	411	449

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2668 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	258.7	2.9
10°-20°	710.1	7.8
20°-30°	997.0	11.0
30°-40°	1086.8	12.0
40°-50°	998.8	11.0
50°-60°	784.4	8.7
60°-70°	510.6	5.6
70°-80°	262.8	2.9
80°-90°	70.5	0.8
90°-100°	74.7	0.8
100°-110°	237.3	2.6
110°-120°	406.1	4.5
120°-130°	534.0	5.9
130°-140°	599.4	6.6
140°-150°	587.8	6.5
150°-160°	493.1	5.4
160°-170°	327.0	3.6
170°-180°	114.3	1.3
0°-30°	1965.7	21.7
0°-40°	3052.5	33.7
0°-60°	4835.8	53.4
0°-90°	5679.7	62.7
90°-120°	718.0	7.9
90°-150°	2439.3	26.9
90°-180°	3374.0	37.3
0°-180°	9053.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2760	2760	2760	2760	2760	
5°	2760	2748	2715	2738	2730	262
15°	2625	2598	2513	2465	2440	740
25°	2383	2303	2138	2036	1998	1096
35°	2053	1926	1706	1549	1494	1285
45°	1679	1511	1249	1071	1012	1296
55°	1276	1082	812	662	615	1140
65°	862	659	435	350	342	854
75°	460	285	200	182	180	486
85°	107	55	47	47	47	123
90°	1	13	36	34	34	9
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°	2760.0	2760.0	2760.0	2760.0	2760.0
2.5°	2772.4	2760.0	2732.4	2757.6	2752.6
5°	2760.0	2747.5	2715.0	2737.5	2730.1
7.5°	2737.5	2722.6	2687.7	2697.4	2685.0
10°	2707.5	2690.1	2640.2	2632.6	2617.7
12.5°	2670.2	2647.6	2580.1	2565.2	2537.6
15°	2625.1	2597.6	2512.7	2465.3	2440.4
17.5°	2572.7	2532.7	2427.7	2372.8	2332.8
20°	2512.7	2462.7	2337.9	2275.6	2220.4
22.5°	2447.9	2390.3	2245.3	2160.5	2123.2
25°	2382.9	2302.9	2138.0	2035.7	1998.2
27.5°	2305.5	2220.4	2038.1	1920.8	1863.3
30°	2223.1	2128.0	1928.1	1801.0	1733.4
32.5°	2143.1	2028.1	1823.5	1673.5	1610.9
35°	2053.2	1925.7	1706.1	1548.7	1493.6
37.5°	1965.8	1828.2	1596.1	1423.6	1361.4
40°	1873.3	1723.6	1481.1	1303.8	1238.9
42.5°	1778.4	1618.7	1366.3	1181.3	1119.1
45°	1678.6	1511.0	1249.0	1071.4	1011.5
47.5°	1583.6	1406.4	1136.6	959.1	904.2
50°	1478.7	1301.4	1026.6	854.1	801.9
52.5°	1376.1	1188.8	921.7	756.8	709.4
55°	1276.3	1081.5	811.7	662.0	614.6
57.5°	1174.0	974.1	714.5	574.5	534.5
60°	1069.1	869.2	611.9	484.7	444.7
62.5°	966.7	766.9	524.4	404.7	384.7
65°	861.7	659.3	434.6	349.8	342.1
67.5°	761.9	559.4	349.8	307.1	299.7
70°	656.9	462.1	289.6	264.7	254.6
72.5°	557.0	372.1	242.2	222.4	217.3
75°	459.5	284.6	199.8	182.3	179.9
77.5°	362.2	202.2	157.4	147.3	142.3
80°	272.2	144.9	119.8	110.0	110.0
82.5°	189.8	97.5	82.4	77.4	77.4
85°	107.3	54.9	47.4	47.4	47.4
87.5°	40.0	19.8	19.8	17.5	17.5
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	12.25	13.20	13.10	14.06	15.14	8.23	9.18	9.08	10.04	11.12
	3H	13.93	14.78	14.79	15.65	16.76	9.42	10.27	10.28	11.14	12.25
	4H	14.54	15.34	15.42	16.22	17.34	9.87	10.67	10.75	11.55	12.67
	6H	14.96	15.70	15.85	16.58	17.71	10.20	10.93	11.09	11.82	12.95
	8H	15.09	15.79	15.98	16.69	17.82	10.29	10.99	11.19	11.89	13.02
	12H	15.15	15.82	16.05	16.71	17.87	10.33	11.00	11.24	11.90	13.05
4H	2H	12.28	13.08	13.17	13.96	15.08	8.83	9.63	9.72	10.51	11.63
	3H	14.12	14.78	15.01	15.69	16.82	10.19	10.85	11.08	11.76	12.90
	4H	14.81	15.41	15.71	16.32	17.48	10.74	11.34	11.64	12.25	13.41
	6H	15.32	15.84	16.24	16.77	17.93	11.16	11.68	12.08	12.61	13.77
	8H	15.49	15.98	16.41	16.90	18.08	11.29	11.77	12.21	12.70	13.87
	12H	15.59	16.03	16.53	16.97	18.15	11.36	11.79	12.29	12.74	13.92
8H	4H	14.78	15.27	15.70	16.19	17.37	11.02	11.51	11.94	12.43	13.61
	6H	15.34	15.74	16.29	16.71	17.88	11.54	11.94	12.48	12.91	14.08
	8H	15.55	15.91	16.51	16.87	18.06	11.73	12.08	12.68	13.04	14.23
	12H	15.69	16.01	16.65	16.96	18.20	11.85	12.16	12.80	13.11	14.35
12H	4H	14.74	15.17	15.68	16.12	17.30	11.03	11.47	11.97	12.41	13.59
	6H	15.32	15.67	16.27	16.63	17.82	11.59	11.94	12.54	12.90	14.09
	8H	15.54	15.85	16.50	16.80	18.04	11.80	12.11	12.76	13.06	14.30