

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: P908100

Luminaire Tested: DFN2DIP-HX3F0-080D040US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908100
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-HX3F0-080D040US840-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

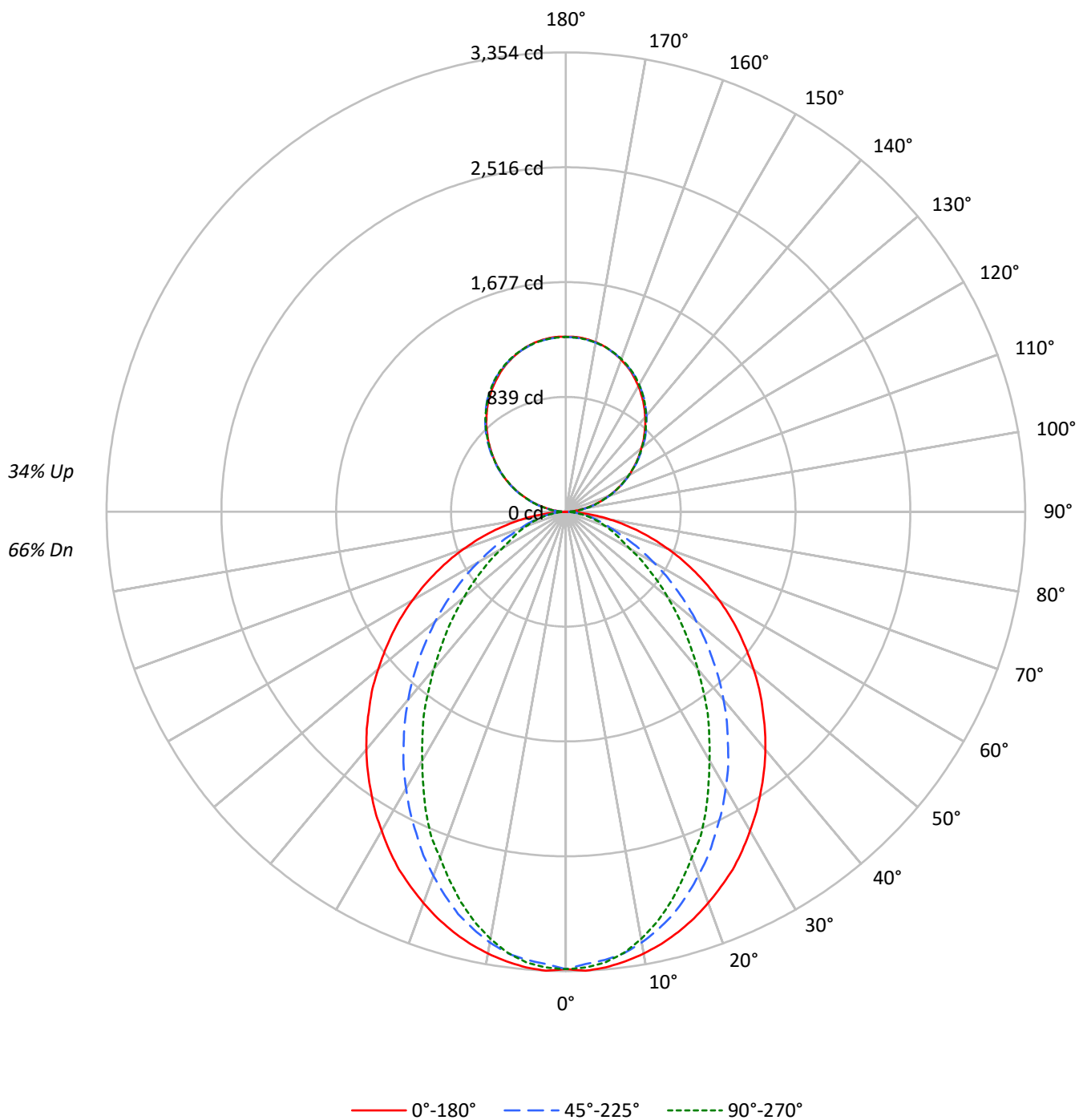
Lumens per Lamp: N/A
Luminaire Lumens: 10442.0 lumens
Efficiency: N/A
Efficacy: 95.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Direct

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	30	10
RCR																	
0	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71
1	102	98	94	91	96	92	89	86	82	79	77	72	70	69	63	62	61
2	93	86	80	75	88	81	76	72	72	68	65	64	61	58	57	54	52
3	86	76	69	63	80	72	66	61	65	59	55	57	53	50	51	48	45
4	79	68	60	54	74	65	58	52	58	52	48	52	47	44	46	42	40
5	73	61	53	47	68	58	51	45	52	46	42	47	42	38	42	38	35
6	67	55	47	41	63	52	45	40	47	41	37	42	38	34	38	34	31
7	62	50	42	37	59	48	40	35	43	37	33	39	34	30	35	31	28
8	58	46	38	33	55	44	37	32	40	34	29	36	31	27	32	28	25
9	54	42	35	29	51	40	33	29	36	31	27	33	28	25	30	26	23
10	51	39	31	27	48	37	30	26	34	28	24	31	26	23	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3868	3868	3868
5°	3872	3804	3829
10°	3832	3726	3702
15°	3778	3601	3507
20°	3706	3428	3269
25°	3633	3236	3040
30°	3535	3039	2749
35°	3439	2827	2494
40°	3341	2608	2201
45°	3228	2365	1937
50°	3111	2121	1678
55°	2988	1860	1430
60°	2846	1587	1175
65°	2682	1310	1054
70°	2484	1052	951
75°	2233	922	861
80°	1872	765	739
85°	1280	498	544

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3228 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	312.9	3.0
10°-20°	859.1	8.2
20°-30°	1206.1	11.6
30°-40°	1314.7	12.6
40°-50°	1208.4	11.6
50°-60°	949.0	9.1
60°-70°	617.7	5.9
70°-80°	318.0	3.0
80°-90°	84.8	0.8
90°-100°	79.1	0.8
100°-110°	251.2	2.4
110°-120°	429.8	4.1
120°-130°	565.3	5.4
130°-140°	634.5	6.1
140°-150°	622.2	6.0
150°-160°	522.0	5.0
160°-170°	346.2	3.3
170°-180°	121.0	1.2
0°-30°	2378.1	22.8
0°-40°	3692.9	35.4
0°-60°	5850.2	56.0
0°-90°	6870.7	65.8
90°-120°	760.1	7.3
90°-150°	2582.2	24.7
90°-180°	3571.0	34.2
0°-180°	10442.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3339	3339	3339	3339	3339	
5°	3339	3324	3284	3312	3303	317
15°	3176	3142	3040	2982	2952	895
25°	2883	2786	2587	2463	2417	1326
35°	2484	2330	2064	1874	1807	1555
45°	2031	1828	1511	1296	1224	1568
55°	1544	1308	982	801	744	1380
65°	1043	798	526	423	414	1034
75°	556	344	242	221	218	588
85°	130	66	57	57	57	149
90°	1	14	38	35	37	10
95°	56	67	69	69	67	63
105°	232	235	237	239	239	245
115°	431	438	436	434	431	427
125°	627	637	634	630	629	561
135°	812	823	826	825	822	627
145°	985	993	999	1000	996	616
155°	1126	1130	1133	1138	1135	519
165°	1226	1224	1224	1232	1227	346
175°	1275	1272	1270	1278	1271	121
180°	1278	1278	1278	1278	1278	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3339.0	3339.0	3339.0	3339.0	3339.0
2.5°	3354.1	3339.0	3305.7	3336.1	3330.0
5°	3339.0	3324.0	3284.5	3311.8	3302.8
7.5°	3311.8	3293.8	3251.5	3263.4	3248.2
10°	3275.5	3254.4	3194.1	3184.8	3166.8
12.5°	3230.4	3203.1	3121.3	3103.3	3070.0
15°	3175.8	3142.5	3039.9	2982.5	2952.3
17.5°	3112.3	3063.9	2937.0	2870.6	2822.2
20°	3039.9	2979.3	2828.3	2753.0	2686.2
22.5°	2961.3	2891.7	2716.4	2613.8	2568.6
25°	2882.8	2786.0	2586.6	2462.9	2417.3
27.5°	2789.1	2686.2	2465.7	2323.7	2254.1
30°	2689.5	2574.3	2332.7	2178.8	2097.0
32.5°	2592.6	2453.6	2206.1	2024.6	1948.9
35°	2484.0	2329.8	2064.0	1873.6	1806.9
37.5°	2378.1	2211.8	1931.0	1722.2	1646.9
40°	2266.3	2085.2	1791.8	1577.3	1498.7
42.5°	2151.5	1958.2	1652.9	1429.3	1353.8
45°	2030.6	1828.1	1511.0	1296.2	1223.8
47.5°	1915.9	1701.4	1375.0	1160.2	1093.9
50°	1788.9	1574.5	1242.0	1033.3	970.1
52.5°	1664.9	1438.1	1115.0	915.6	858.3
55°	1544.0	1308.4	982.0	800.8	743.5
57.5°	1420.3	1178.5	864.3	695.1	646.6
60°	1293.2	1051.6	740.2	586.3	538.0
62.5°	1169.5	927.8	634.5	489.6	465.5
65°	1042.6	797.6	525.7	423.2	413.8
67.5°	921.7	676.8	423.2	371.5	362.6
70°	794.8	559.2	350.4	320.2	308.1
72.5°	673.9	450.1	293.1	269.0	262.9
75°	555.9	344.4	241.8	220.6	217.7
77.5°	438.3	244.6	190.5	178.2	172.2
80°	329.2	175.4	144.9	133.0	133.0
82.5°	229.5	118.0	99.7	93.6	93.6
85°	129.9	66.3	57.4	57.4	57.4
87.5°	48.4	24.0	24.0	21.2	21.2
90°	1.1	13.8	37.8	35.4	36.6
92.5°	23.8	32.3	33.5	34.6	34.6
95°	56.2	67.1	69.0	69.0	67.1
97.5°	93.6	103.6	107.9	107.9	107.9
100°	136.7	145.6	148.7	148.7	147.5
102.5°	182.2	188.7	193.0	194.1	193.0
105°	231.9	234.9	237.2	239.1	239.1
107.5°	281.1	285.8	285.8	286.5	281.1
110°	328.9	335.1	335.1	335.1	332.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	380.5	387.1	385.9	382.8	380.5
115°	431.3	437.6	435.6	434.4	431.3
117.5°	481.8	490.3	484.9	481.8	478.8
120°	532.7	541.1	532.7	532.7	529.2
122.5°	578.9	589.7	584.3	581.2	578.9
125°	627.4	637.0	634.0	630.5	629.3
127.5°	674.8	686.7	682.5	677.8	674.8
130°	719.0	733.0	731.0	728.7	724.5
132.5°	768.7	779.5	780.3	774.9	771.8
135°	811.5	823.4	825.8	824.6	821.5
137.5°	859.3	868.9	870.8	870.0	865.5
140°	901.2	910.9	916.3	916.3	912.0
142.5°	944.4	954.0	957.0	958.3	954.0
145°	985.2	992.9	999.1	1000.3	996.0
147.5°	1021.8	1031.4	1036.0	1037.9	1033.7
150°	1059.6	1066.1	1070.4	1073.8	1070.4
152.5°	1093.1	1099.5	1105.0	1109.2	1105.0
155°	1126.5	1129.6	1133.1	1138.5	1135.0
157.5°	1155.5	1157.7	1159.6	1167.4	1162.0
160°	1181.2	1183.6	1184.7	1191.2	1186.6
162.5°	1205.1	1205.1	1206.3	1213.6	1208.2
165°	1225.6	1224.4	1224.4	1232.0	1226.7
167.5°	1244.1	1240.5	1240.5	1248.3	1242.8
170°	1257.9	1254.8	1253.6	1261.3	1254.8
172.5°	1267.5	1264.5	1263.2	1271.0	1264.5
175°	1275.3	1272.1	1269.8	1277.5	1271.0
177.5°	1279.5	1276.4	1274.0	1280.6	1274.0
180°	1277.5	1277.5	1277.5	1277.5	1277.5

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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	13.16	14.14	13.98	14.97	16.00	9.14	10.12	9.96	10.95	11.98
	3H	14.84	15.72	15.67	16.56	17.62	10.33	11.21	11.16	12.05	13.11
	4H	15.45	16.28	16.30	17.13	18.20	10.79	11.61	11.64	12.46	13.53
	6H	15.88	16.64	16.74	17.50	18.58	11.11	11.87	11.97	12.73	13.81
	8H	16.00	16.73	16.87	17.60	18.68	11.21	11.93	12.07	12.80	13.89
	12H	16.07	16.76	16.94	17.63	18.73	11.25	11.94	12.12	12.81	13.92
4H	2H	13.20	14.02	14.05	14.87	15.94	9.75	10.57	10.60	11.42	12.49
	3H	15.03	15.72	15.89	16.60	17.68	11.11	11.79	11.97	12.68	13.76
	4H	15.72	16.35	16.60	17.23	18.34	11.66	12.28	12.53	13.16	14.27
	6H	16.24	16.78	17.13	17.68	18.80	12.08	12.62	12.97	13.52	14.63
	8H	16.41	16.92	17.31	17.81	18.94	12.21	12.71	13.10	13.61	14.74
	12H	16.51	16.96	17.42	17.88	19.01	12.28	12.73	13.19	13.65	14.78
8H	4H	15.70	16.20	16.59	17.10	18.23	11.94	12.44	12.84	13.34	14.47
	6H	16.27	16.68	17.18	17.62	18.75	12.46	12.87	13.38	13.82	14.94
	8H	16.48	16.84	17.41	17.78	18.92	12.65	13.02	13.58	13.95	15.09
	12H	16.62	16.94	17.55	17.86	19.06	12.77	13.09	13.70	14.02	15.21
12H	4H	15.66	16.11	16.57	17.03	18.16	11.95	12.40	12.86	13.32	14.45
	6H	16.24	16.61	17.17	17.54	18.68	12.51	12.88	13.44	13.81	14.95
	8H	16.46	16.79	17.39	17.71	18.91	12.72	13.04	13.65	13.97	15.16