

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: P909050

Luminaire Tested: DFN2DIP-SQ2F0-080D040US840-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909050
REPORT IS A COMBINATION OF REPORTS P899794 AND P896659
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-080D040US840-RLLFLL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

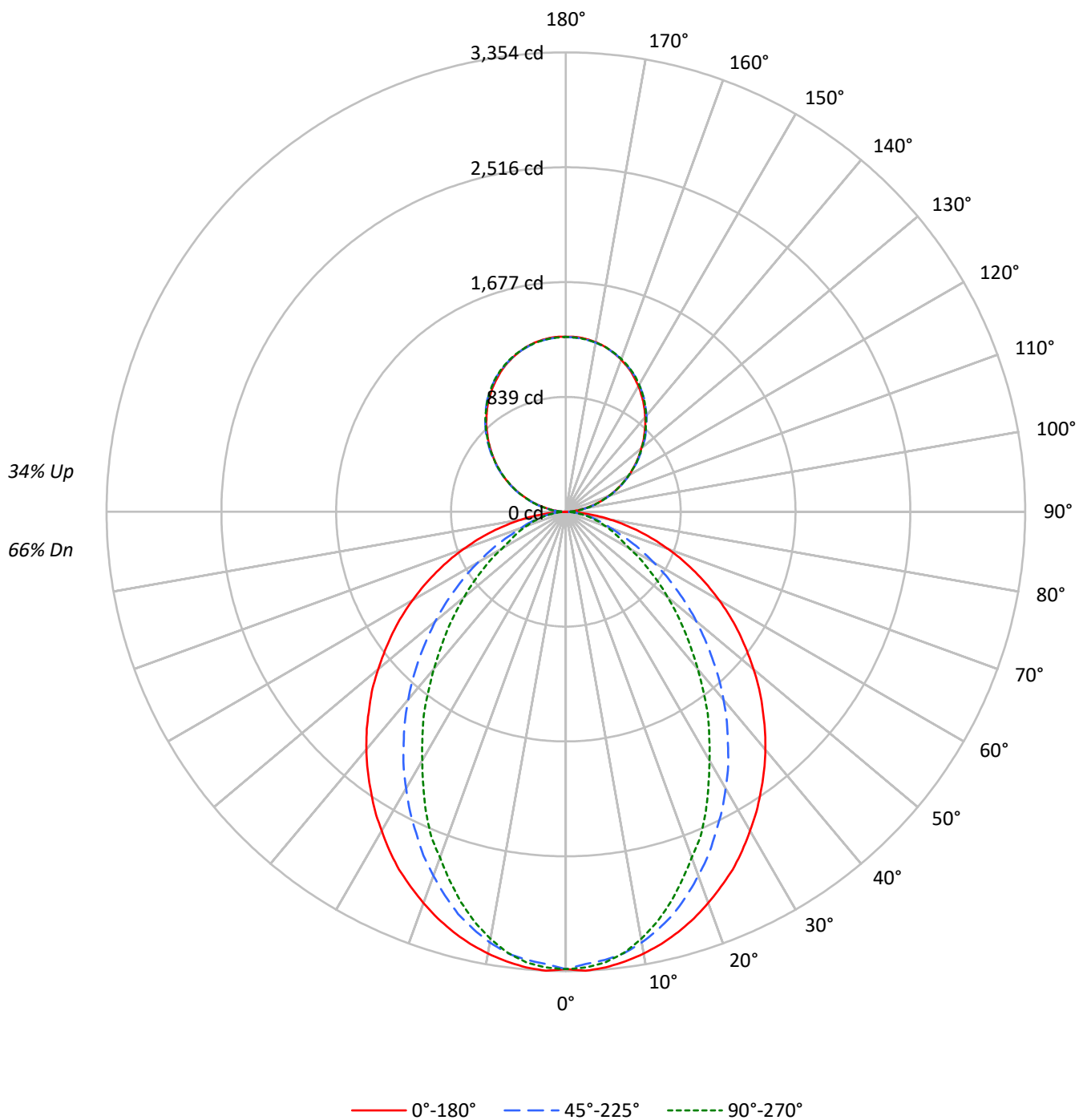
Lumens per Lamp: N/A
Luminaire Lumens: 10442.0 lumens
Efficiency: N/A
Efficacy: 96.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 108.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P909050

CATALOG NUMBER: DFN2DIP-SQ2F0-080D040US840-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P909050

CATALOG NUMBER: DFN2DIP-SQ2F0-080D040US840-RLFL

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	50	30	10
RCR																				
0	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71	66		
1	102	98	94	91	96	92	89	86	82	79	77	72	70	69	63	62	61	57		
2	93	86	80	75	88	81	76	72	72	68	65	64	61	58	57	54	52	49		
3	86	76	69	63	80	72	66	61	65	59	55	57	53	50	51	48	45	42		
4	79	68	60	54	74	65	58	52	58	52	48	52	47	44	46	42	40	36		
5	73	61	53	47	68	58	51	45	52	46	42	47	42	38	42	38	35	32		
6	67	55	47	41	63	52	45	40	47	41	37	42	38	34	38	34	31	29		
7	62	50	42	37	59	48	40	35	43	37	33	39	34	30	35	31	28	26		
8	58	46	38	33	55	44	37	32	40	34	29	36	31	27	32	28	25	23		
9	54	42	35	29	51	40	33	29	36	31	27	33	28	25	30	26	23	21		
10	51	39	31	27	48	37	30	26	34	28	24	31	26	23	28	24	21	19		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7342	7342	7342
5°	7341	7210	7262
10°	7256	7052	7015
15°	7143	6804	6640
20°	6998	6468	6184
25°	6850	6094	5744
30°	6655	5712	5189
35°	6463	5303	4702
40°	6268	4881	4145
45°	6041	4416	3641
50°	5807	3948	3149
55°	5560	3450	2677
60°	5274	2931	2194
65°	4945	2405	1963
70°	4545	1916	1762
75°	4041	1659	1583
80°	3318	1347	1341
85°	2161	837	955

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 6041 cd/sqm

TEST NUMBER: P909050

CATALOG NUMBER: DFN2DIP-SQ2F0-080D040US840-RLFL

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	

TEST NUMBER: P909050

CATALOG NUMBER: DFN2DIP-SQ2F0-080D040US840-RLFL

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



TEST NUMBER: P909050

CATALOG NUMBER: DFN2DIP-SQ2F0-080D040US840-RLFL

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

TEST NUMBER: P909050

CATALOG NUMBER: DFN2DIP-SQ2F0-080D040US840-RLLFLL

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	15.32	16.30	16.13	17.13	18.16	11.28	12.26	12.10	13.09	14.12
	3H	16.99	17.86	17.82	18.71	19.76	12.46	13.34	13.29	14.18	15.24
	4H	17.59	18.42	18.44	19.27	20.33	12.91	13.73	13.75	14.58	15.65
	6H	18.00	18.76	18.86	19.62	20.70	13.22	13.98	14.08	14.84	15.92
	8H	18.13	18.85	18.99	19.72	20.81	13.30	14.03	14.17	14.90	15.98
	12H	18.18	18.87	19.06	19.74	20.85	13.34	14.03	14.22	14.90	16.01
4H	2H	15.35	16.18	16.20	17.03	18.09	11.88	12.71	12.73	13.56	14.63
	3H	17.17	17.86	18.03	18.74	19.82	13.22	13.91	14.09	14.79	15.88
	4H	17.85	18.48	18.73	19.36	20.47	13.76	14.39	14.64	15.27	16.38
	6H	18.36	18.89	19.25	19.80	20.91	14.17	14.71	15.06	15.61	16.73
	8H	18.52	19.03	19.42	19.92	21.05	14.29	14.79	15.18	15.69	16.82
	12H	18.62	19.07	19.53	19.98	21.12	14.35	14.80	15.26	15.72	16.85
8H	4H	17.83	18.33	18.72	19.23	20.35	14.04	14.54	14.93	15.44	16.57
	6H	18.38	18.79	19.30	19.73	20.86	14.54	14.96	15.46	15.90	17.02
	8H	18.58	18.95	19.51	19.88	21.02	14.72	15.09	15.65	16.02	17.16
	12H	18.71	19.04	19.64	19.96	21.16	14.83	15.15	15.76	16.08	17.27
12H	4H	17.79	18.24	18.70	19.15	20.29	14.05	14.50	14.96	15.42	16.55
	6H	18.35	18.72	19.28	19.65	20.80	14.59	14.95	15.51	15.89	17.03
	8H	18.56	18.89	19.49	19.81	21.01	14.79	15.11	15.72	16.03	17.23