

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: P909212

Luminaire Tested: DFN2DIP-SQ3F0-080D040US840-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909212
REPORT IS A COMBINATION OF REPORTS P899869 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-080D040US840-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

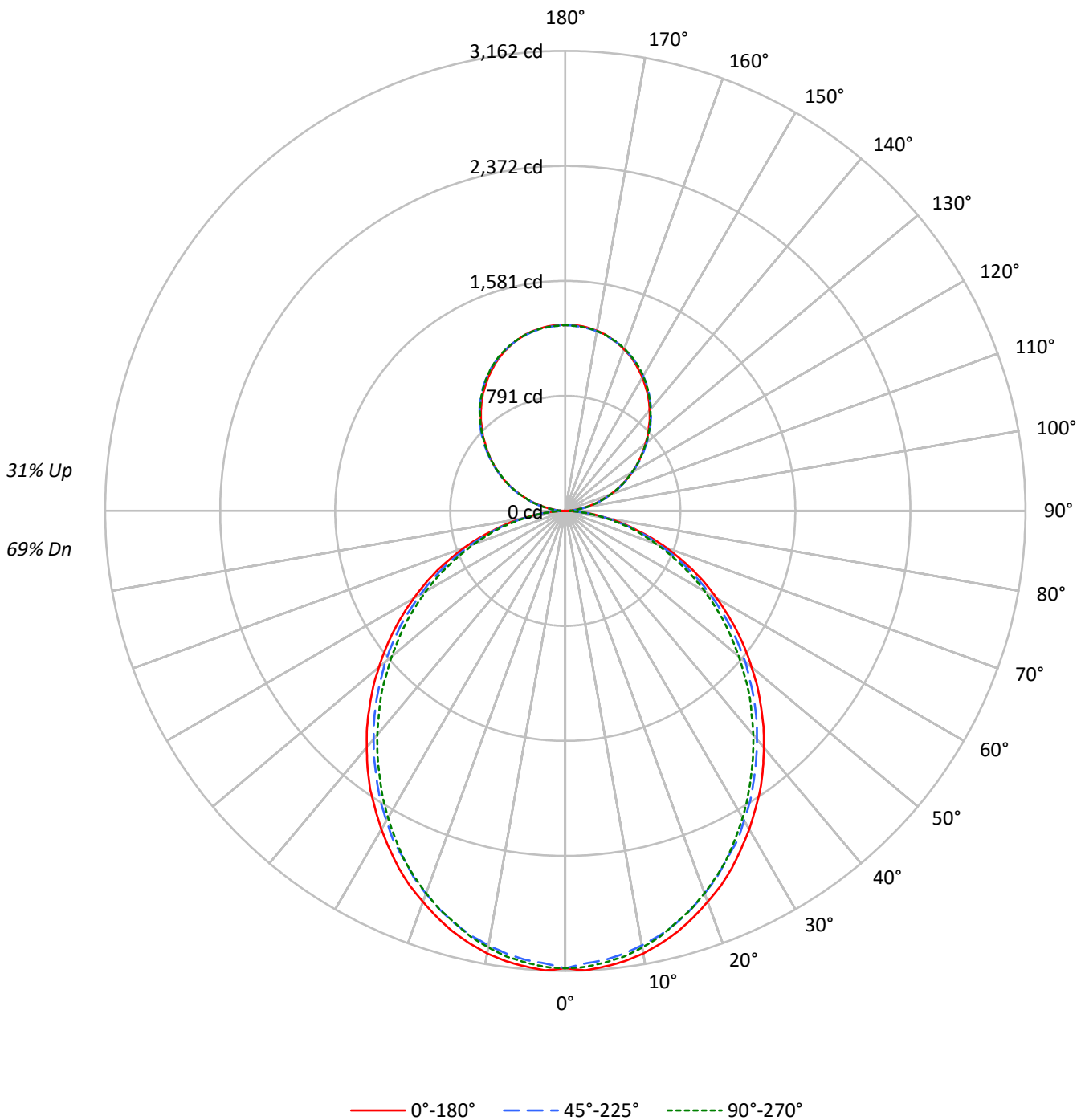
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11573.1 lumens
Efficiency: N/A
Efficacy: 108.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 106.5
Input Voltage (V):
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P909212
CATALOG NUMBER: DFN2DIP-SQ3F0-080D040US840-FLLFLL

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	112	112	112	112	106	106	106	106	94	94	94	83	83	83	74	74	74	69			69
1	102	98	94	90	96	92	89	86	83	80	77	74	71	70	65	64	62	58			58
2	93	85	79	74	88	81	75	70	72	68	64	65	61	58	57	55	52	49			49
3	85	75	67	61	80	71	64	59	64	58	54	57	53	49	51	48	45	41			41
4	78	67	58	52	73	63	56	50	57	51	46	51	46	42	46	42	39	35			35
5	71	59	51	45	67	56	49	43	51	45	40	46	41	37	41	37	34	31			31
6	66	53	45	39	62	51	43	38	46	40	35	41	36	32	37	33	30	27			27
7	61	48	40	34	58	46	39	33	42	35	31	38	33	29	34	30	26	24			24
8	57	44	36	31	54	42	35	30	38	32	28	35	29	26	31	27	24	22			22
9	53	40	33	27	50	39	31	26	35	29	25	32	27	23	29	25	21	19			19
10	50	37	30	25	47	36	29	24	32	27	22	30	25	21	27	23	20	18			18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3602	3602	3602
5°	3605	3549	3574
10°	3574	3499	3525
15°	3519	3439	3448
20°	3446	3357	3369
25°	3373	3259	3279
30°	3282	3167	3164
35°	3195	3060	3042
40°	3090	2951	2926
45°	2984	2842	2808
50°	2868	2727	2671
55°	2747	2595	2544
60°	2609	2438	2400
65°	2459	2275	2229
70°	2268	2076	2045
75°	2004	1838	1873
80°	1684	1533	1548
85°	1185	1017	1013

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2984 cd/sqm



TEST NUMBER: P909212

CATALOG NUMBER: DFN2DIP-SQ3F0-080D040US840-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	295.9	2.6
10°-20°	832.5	7.2
20°-30°	1223.4	10.6
30°-40°	1420.9	12.3
40°-50°	1419.1	12.3
50°-60°	1237.5	10.7
60°-70°	914.7	7.9
70°-80°	517.6	4.5
80°-90°	140.2	1.2
90°-100°	79.1	0.7
100°-110°	251.2	2.2
110°-120°	429.8	3.7
120°-130°	565.3	4.9
130°-140°	634.5	5.5
140°-150°	622.2	5.4
150°-160°	522.0	4.5
160°-170°	346.2	3.0
170°-180°	121.0	1.0
0°-30°	2351.8	20.3
0°-40°	3772.7	32.6
0°-60°	6429.3	55.6
0°-90°	8001.8	69.1
90°-120°	760.1	6.6
90°-150°	2582.2	22.3
90°-180°	3571.0	30.9
0°-180°	11573.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3144	3144	3144	3144	3144	
5°	3144	3132	3098	3122	3117	298
15°	2992	2975	2935	2947	2932	843
25°	2708	2684	2633	2639	2633	1246
35°	2337	2306	2258	2240	2225	1459
45°	1902	1880	1835	1802	1790	1467
55°	1439	1421	1384	1348	1333	1287
65°	970	952	922	895	880	959
75°	508	502	487	469	475	542
85°	124	121	118	109	106	138
90°	1	14	38	35	37	11
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: P909212

CATALOG NUMBER: DFN2DIP-SQ3F0-080D040US840-FLLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3143.5	3143.5	3143.5	3143.5	3143.5
2.5°	3161.8	3146.7	3113.4	3143.5	3137.8
5°	3143.5	3131.7	3098.4	3122.4	3116.6
7.5°	3122.4	3104.4	3071.1	3095.4	3089.4
10°	3089.4	3068.2	3031.9	3056.0	3047.1
12.5°	3043.8	3025.9	2989.6	3004.7	2998.6
15°	2992.5	2974.6	2935.1	2947.3	2932.2
17.5°	2929.0	2911.0	2871.6	2886.7	2871.6
20°	2859.4	2841.5	2799.1	2808.1	2796.2
22.5°	2790.2	2762.9	2723.4	2723.4	2717.3
25°	2708.4	2684.3	2633.0	2638.8	2633.0
27.5°	2617.6	2596.5	2557.3	2548.3	2533.2
30°	2527.2	2502.7	2457.6	2448.6	2436.4
32.5°	2430.3	2412.4	2363.9	2345.6	2333.5
35°	2336.6	2306.5	2258.1	2239.8	2224.7
37.5°	2230.8	2203.5	2155.2	2133.9	2118.9
40°	2122.1	2097.7	2049.3	2022.4	2010.1
42.5°	2016.3	1991.9	1943.8	1913.3	1895.4
45°	1901.5	1880.3	1834.7	1801.7	1789.6
47.5°	1789.6	1768.4	1719.9	1686.6	1668.6
50°	1671.5	1656.5	1614.1	1571.8	1556.7
52.5°	1556.7	1535.5	1496.4	1463.1	1441.9
55°	1439.0	1420.7	1384.5	1348.3	1333.1
57.5°	1321.0	1306.0	1266.5	1230.2	1218.0
60°	1203.0	1191.1	1148.7	1115.4	1106.4
62.5°	1088.1	1067.0	1036.8	1006.7	994.5
65°	970.5	952.2	922.0	894.7	879.7
67.5°	849.5	834.1	807.2	786.1	773.9
70°	737.6	725.4	698.2	677.0	665.1
72.5°	622.8	610.7	595.5	574.4	565.4
75°	507.7	501.9	486.6	468.6	474.6
77.5°	405.1	392.8	386.8	377.8	368.8
80°	302.5	299.2	293.2	284.2	278.0
82.5°	205.6	205.6	202.7	190.5	190.5
85°	123.8	120.9	118.1	108.8	105.8
87.5°	54.5	48.5	42.3	33.3	30.2
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: P909212

CATALOG NUMBER: DFN2DIP-SQ3F0-080D040US840-FLLFLL

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	13.29	14.36	14.07	15.15	16.12	12.85	13.91	13.62	14.71	15.68
	3H	14.96	15.92	15.75	16.73	17.72	14.47	15.43	15.26	16.24	17.23
	4H	15.56	16.46	16.36	17.27	18.28	15.06	15.97	15.87	16.78	17.79
	6H	15.96	16.80	16.78	17.62	18.64	15.46	16.30	16.28	17.12	18.14
	8H	16.07	16.87	16.90	17.71	18.73	15.57	16.36	16.40	17.21	18.23
	12H	16.13	16.88	16.96	17.72	18.77	15.62	16.37	16.45	17.21	18.26
4H	2H	13.77	14.68	14.58	15.49	16.50	13.42	14.32	14.23	15.14	16.15
	3H	15.65	16.41	16.47	17.25	18.28	15.24	16.00	16.06	16.85	17.87
	4H	16.37	17.06	17.21	17.90	18.96	15.95	16.63	16.78	17.48	18.53
	6H	16.89	17.49	17.74	18.36	19.42	16.46	17.06	17.31	17.93	18.98
	8H	17.05	17.60	17.90	18.47	19.54	16.61	17.16	17.46	18.03	19.10
	12H	17.13	17.63	18.00	18.51	19.59	16.68	17.18	17.55	18.06	19.14
8H	4H	16.58	17.14	17.43	18.00	19.07	16.20	16.76	17.06	17.62	18.69
	6H	17.21	17.67	18.10	18.58	19.65	16.83	17.29	17.71	18.20	19.27
	8H	17.43	17.84	18.33	18.74	19.83	17.04	17.45	17.93	18.35	19.44
	12H	17.57	17.93	18.47	18.82	19.97	17.16	17.52	18.06	18.41	19.55
12H	4H	16.57	17.07	17.45	17.96	19.04	16.21	16.71	17.08	17.59	18.67
	6H	17.24	17.65	18.14	18.55	19.64	16.87	17.28	17.76	18.18	19.27
	8H	17.49	17.85	18.39	18.74	19.89	17.11	17.47	18.01	18.36	19.51