

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: P922906

Luminaire Tested: DFN2DIP-SQ3F0-090D080US940-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922906
REPORT IS A COMBINATION OF REPORTS P899944 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-090D080US940-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

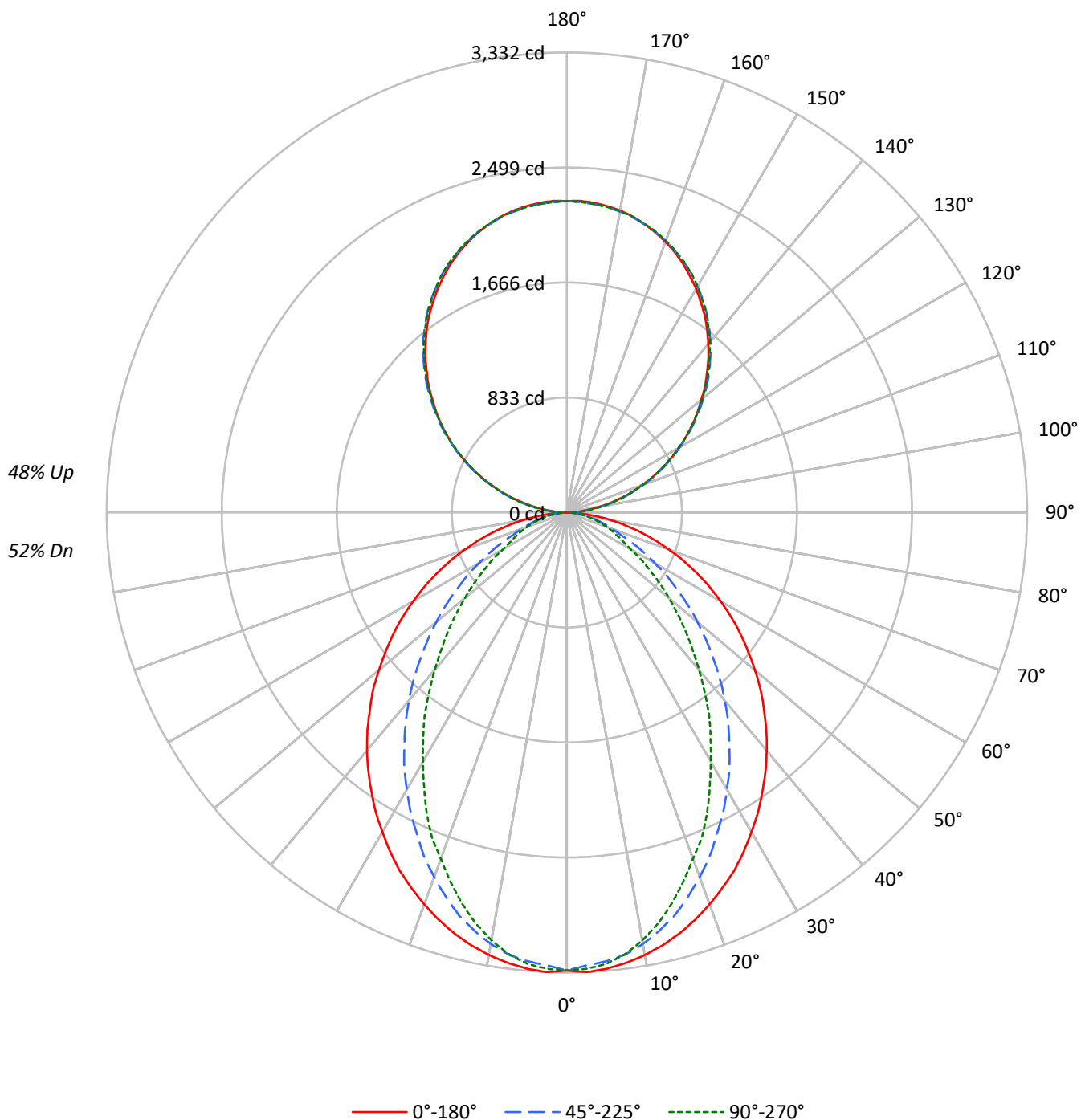
Lumens per Lamp: N/A
Luminaire Lumens: 13134.9 lumens
Efficiency: N/A
Efficacy: 88.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 148.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P922906

CATALOG NUMBER: DFN2DIP-SQ3F0-090D080US940-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P922906

CATALOG NUMBER: DFN2DIP-SQ3F0-090D080US940-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
RCR																	
0	108	108	108	108	100	100	100	100	84	84	84	71	71	71	58	58	58
1	99	95	91	88	91	88	84	82	75	72	70	63	61	60	52	51	50
2	90	83	77	72	83	77	72	68	66	62	59	56	53	51	46	44	43
3	83	74	66	61	76	68	62	57	59	54	50	50	46	44	42	39	37
4	76	65	58	52	70	61	54	49	53	47	43	45	41	38	37	35	32
5	70	59	51	45	65	55	48	42	47	42	38	40	36	33	34	31	28
6	65	53	45	39	60	49	42	37	43	37	33	37	32	29	31	28	25
7	60	48	40	35	55	45	38	33	39	33	29	34	29	26	28	25	23
8	56	44	36	31	51	41	34	29	36	30	26	31	27	23	26	23	21
9	52	40	33	28	48	37	31	26	33	27	24	28	24	21	24	21	19
10	49	37	30	25	45	34	28	24	30	25	21	26	22	19	23	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3801	3801	3801
5°	3804	3738	3763
10°	3764	3662	3639
15°	3710	3538	3449
20°	3639	3369	3215
25°	3566	3180	2990
30°	3469	2986	2705
35°	3374	2778	2455
40°	3278	2563	2168
45°	3165	2325	1908
50°	3049	2085	1654
55°	2927	1828	1410
60°	2787	1561	1159
65°	2624	1289	1042
70°	2427	1035	941
75°	2179	907	853
80°	1821	753	736
85°	1234	491	546

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3165 cd/sqm

TEST NUMBER: P922906

CATALOG NUMBER: DFN2DIP-SQ3F0-090D080US940-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	310.9	2.4
10°-20°	853.4	6.5
20°-30°	1198.1	9.1
30°-40°	1306.0	9.9
40°-50°	1200.4	9.1
50°-60°	942.7	7.2
60°-70°	613.6	4.7
70°-80°	315.9	2.4
80°-90°	87.1	0.7
90°-100°	139.6	1.1
100°-110°	443.6	3.4
110°-120°	759.1	5.8
120°-130°	998.3	7.6
130°-140°	1120.6	8.5
140°-150°	1098.9	8.4
150°-160°	921.8	7.0
160°-170°	611.3	4.7
170°-180°	213.7	1.6
0°-30°	2362.4	18.0
0°-40°	3668.4	27.9
0°-60°	5811.5	44.2
0°-90°	6828.0	52.0
90°-120°	1342.3	10.2
90°-150°	4560.1	34.7
90°-180°	6307.0	48.0
0°-180°	13134.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3317	3317	3317	3317	3317	
5°	3317	3302	3263	3290	3281	315
15°	3155	3122	3020	2963	2933	889
25°	2864	2768	2570	2446	2401	1317
35°	2468	2314	2050	1861	1795	1544
45°	2017	1816	1501	1288	1216	1558
55°	1534	1300	975	796	738	1371
65°	1036	792	522	420	411	1027
75°	552	342	240	219	216	584
85°	129	66	57	57	57	148
90°	2	24	67	63	65	13
95°	99	118	122	122	118	111
105°	410	415	419	422	422	432
115°	762	773	769	767	762	753
125°	1108	1125	1120	1113	1111	990
135°	1433	1454	1458	1456	1451	1108
145°	1740	1754	1764	1766	1759	1087
155°	1990	1995	2001	2010	2004	916
165°	2164	2162	2162	2176	2166	611
175°	2252	2247	2242	2256	2244	214
180°	2256	2256	2256	2256	2256	

TEST NUMBER: P922906

CATALOG NUMBER: DFN2DIP-SQ3F0-090D080US940-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3316.9	3316.9	3316.9	3316.9	3316.9
2.5°	3331.9	3316.9	3283.7	3314.0	3308.0
5°	3316.9	3301.9	3262.8	3289.8	3280.9
7.5°	3289.8	3272.0	3230.0	3241.7	3226.7
10°	3253.9	3232.8	3173.0	3163.7	3145.9
12.5°	3208.9	3181.9	3100.7	3082.8	3049.6
15°	3154.8	3121.7	3019.8	2962.7	2932.8
17.5°	3091.7	3043.7	2917.5	2851.6	2803.5
20°	3019.8	2959.6	2809.5	2734.7	2668.4
22.5°	2941.8	2872.6	2698.4	2596.5	2551.6
25°	2863.7	2767.5	2569.5	2446.5	2401.3
27.5°	2770.7	2668.4	2449.4	2308.3	2239.2
30°	2671.7	2557.3	2317.2	2164.4	2083.1
32.5°	2575.4	2437.2	2191.4	2011.2	1936.0
35°	2467.5	2314.3	2050.3	1861.2	1794.9
37.5°	2362.4	2197.2	1918.2	1710.8	1636.0
40°	2251.3	2071.4	1779.9	1566.9	1488.9
42.5°	2137.3	1945.3	1642.0	1419.8	1344.9
45°	2017.2	1816.0	1500.9	1287.5	1215.6
47.5°	1903.2	1690.1	1365.9	1152.5	1086.6
50°	1777.1	1564.0	1233.8	1026.4	963.7
52.5°	1653.9	1428.7	1107.7	909.5	852.6
55°	1533.7	1299.7	975.4	795.6	738.5
57.5°	1410.9	1170.7	858.6	690.5	642.4
60°	1284.7	1044.5	735.4	582.5	534.4
62.5°	1161.8	921.7	630.3	486.3	462.4
65°	1035.6	792.4	522.3	420.4	411.2
67.5°	915.6	672.3	420.4	369.1	360.2
70°	789.5	555.4	348.1	318.2	306.0
72.5°	669.4	447.1	291.1	267.2	261.2
75°	552.2	342.1	240.1	219.1	216.2
77.5°	435.3	243.0	189.1	177.1	171.0
80°	327.1	174.2	143.9	132.2	132.2
82.5°	228.0	117.2	99.1	93.0	93.0
85°	128.9	65.9	57.0	57.0	57.0
87.5°	48.1	23.9	23.9	21.0	21.0
90°	2.1	24.5	66.7	62.6	64.6
92.5°	42.2	57.2	59.2	61.2	61.2
95°	99.3	118.3	121.7	121.7	118.3
97.5°	165.3	183.0	190.5	190.5	190.5
100°	241.5	257.1	262.5	262.5	260.5
102.5°	321.7	333.3	340.7	342.8	340.7
105°	409.5	414.9	419.0	422.4	422.4
107.5°	496.5	504.7	504.7	506.0	496.5
110°	580.9	591.7	591.7	591.7	586.3



TEST NUMBER: P922906

CATALOG NUMBER: DFN2DIP-SQ3F0-090D080US940-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	672.0	683.6	681.5	676.1	672.0
115°	761.8	772.7	769.3	767.2	761.8
117.5°	850.9	865.9	856.3	850.9	845.4
120°	940.7	955.6	940.7	940.7	934.5
122.5°	1022.3	1041.3	1031.8	1026.4	1022.3
125°	1108.0	1125.0	1119.5	1113.4	1111.4
127.5°	1191.7	1212.7	1205.2	1197.1	1191.7
130°	1269.9	1294.3	1290.9	1286.9	1279.4
132.5°	1357.6	1376.6	1378.0	1368.5	1363.1
135°	1433.1	1454.2	1458.3	1456.3	1450.8
137.5°	1517.4	1534.5	1537.8	1536.5	1528.3
140°	1591.6	1608.6	1618.1	1618.1	1610.6
142.5°	1667.8	1684.8	1690.2	1692.3	1684.8
145°	1739.9	1753.5	1764.3	1766.4	1758.9
147.5°	1804.5	1821.5	1829.6	1833.1	1825.6
150°	1871.2	1882.7	1890.2	1896.3	1890.2
152.5°	1930.3	1941.9	1951.4	1958.9	1951.4
155°	1989.5	1994.9	2001.1	2010.5	2004.5
157.5°	2040.5	2044.6	2048.0	2061.5	2052.1
160°	2086.1	2090.2	2092.2	2103.7	2095.6
162.5°	2128.2	2128.2	2130.3	2143.2	2133.7
165°	2164.3	2162.2	2162.2	2175.9	2166.3
167.5°	2196.9	2190.8	2190.8	2204.4	2194.9
170°	2221.4	2216.0	2213.9	2227.6	2216.0
172.5°	2238.5	2233.0	2231.0	2244.5	2233.0
175°	2252.0	2246.6	2242.5	2256.1	2244.5
177.5°	2259.5	2254.1	2250.0	2261.6	2250.0
180°	2256.1	2256.1	2256.1	2256.1	2256.1

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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	11.93	12.78	12.88	13.74	14.98	7.90	8.74	8.84	9.70	10.95
	3H	13.61	14.37	14.57	15.33	16.60	9.08	9.84	10.04	10.80	12.07
	4H	14.21	14.93	15.19	15.90	17.18	9.53	10.24	10.50	11.21	12.49
	6H	14.63	15.29	15.62	16.27	17.56	9.84	10.50	10.82	11.48	12.77
	8H	14.76	15.38	15.75	16.38	17.67	9.93	10.56	10.92	11.55	12.84
	12H	14.82	15.41	15.81	16.40	17.71	9.97	10.57	10.96	11.55	12.86
4H	2H	11.95	12.67	12.93	13.64	14.92	8.49	9.21	9.47	10.18	11.45
	3H	13.78	14.37	14.77	15.37	16.66	9.83	10.43	10.82	11.43	12.72
	4H	14.47	15.01	15.46	16.00	17.32	10.38	10.92	11.37	11.92	13.23
	6H	14.98	15.45	15.99	16.46	17.78	10.79	11.26	11.80	12.28	13.59
	8H	15.15	15.59	16.16	16.60	17.93	10.92	11.35	11.92	12.36	13.69
	12H	15.24	15.64	16.27	16.66	18.00	10.98	11.37	12.00	12.40	13.73
8H	4H	14.43	14.87	15.44	15.88	17.21	10.66	11.09	11.66	12.10	13.43
	6H	15.00	15.36	16.03	16.41	17.73	11.17	11.53	12.20	12.58	13.90
	8H	15.21	15.53	16.25	16.57	17.91	11.35	11.67	12.39	12.71	14.05
	12H	15.34	15.62	16.39	16.66	18.04	11.47	11.75	12.51	12.78	14.17
12H	4H	14.39	14.78	15.41	15.81	17.14	10.66	11.05	11.69	12.08	13.41
	6H	14.97	15.29	16.01	16.33	17.67	11.21	11.53	12.26	12.57	13.91
	8H	15.19	15.47	16.23	16.50	17.89	11.42	11.70	12.46	12.73	14.12

END OF REPORT