

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: P903778

Luminaire Tested: DFN2DIP-SQ3F0-080D090US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903778
REPORT IS A COMBINATION OF REPORTS P899960 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-080D090US830-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

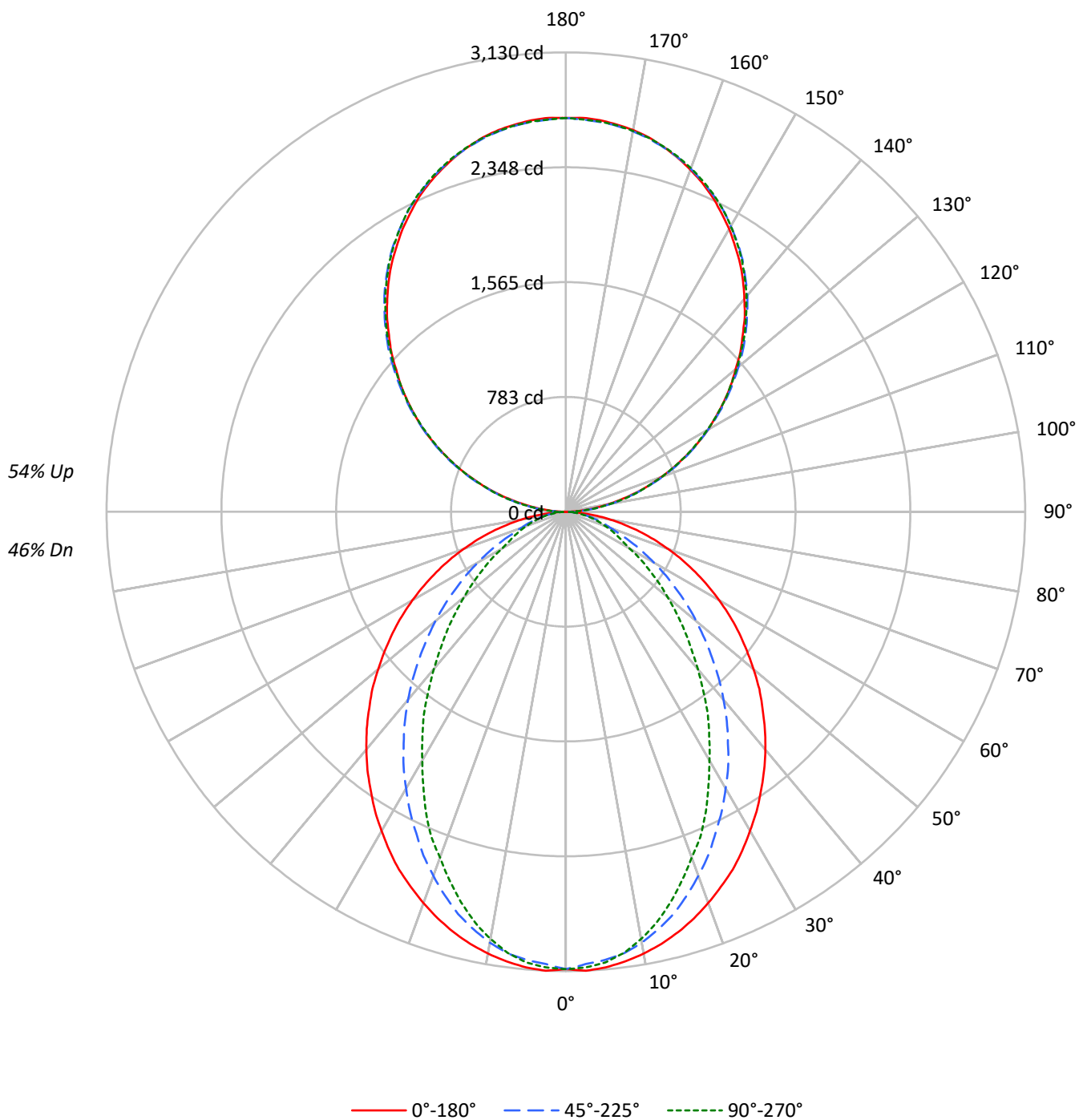
Lumens per Lamp: N/A
Luminaire Lumens: 13916.7 lumens
Efficiency: N/A
Efficacy: 96.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 144.7
Input Voltage (V):
Input Current (Ain): 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: P903778

CATALOG NUMBER: DFN2DIP-SQ3F0-080D090US830-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P903778

CATALOG NUMBER: DFN2DIP-SQ3F0-080D090US830-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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	53	53	53
1	97	93	90	86	89	86	83	80	72	70	68	59	57	56	47	46	45
2	89	82	76	71	82	75	70	66	63	60	57	52	50	47	42	40	39
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	33
4	75	64	57	51	68	59	53	48	50	45	41	42	38	35	34	31	29
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19
9	51	39	32	27	47	36	30	25	31	26	22	26	22	20	22	19	17
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3571	3571	3571
5°	3574	3512	3535
10°	3537	3441	3419
15°	3486	3324	3240
20°	3419	3166	3021
25°	3351	2988	2810
30°	3260	2806	2542
35°	3170	2610	2306
40°	3080	2408	2036
45°	2974	2184	1792
50°	2865	1959	1554
55°	2751	1718	1324
60°	2618	1466	1089
65°	2466	1211	979
70°	2281	973	884
75°	2048	852	802
80°	1711	708	691
85°	1161	460	512

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2974 cd/sqm

TEST NUMBER: P903778

CATALOG NUMBER: DFN2DIP-SQ3F0-080D090US830-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	292.1	2.1
10°-20°	801.8	5.8
20°-30°	1125.7	8.1
30°-40°	1227.1	8.8
40°-50°	1127.8	8.1
50°-60°	885.7	6.4
60°-70°	576.5	4.1
70°-80°	296.8	2.1
80°-90°	83.4	0.6
90°-100°	166.0	1.2
100°-110°	527.5	3.8
110°-120°	902.7	6.5
120°-130°	1187.2	8.5
130°-140°	1332.5	9.6
140°-150°	1306.7	9.4
150°-160°	1096.1	7.9
160°-170°	726.9	5.2
170°-180°	254.1	1.8
0°-30°	2219.6	15.9
0°-40°	3446.7	24.8
0°-60°	5460.2	39.2
0°-90°	6416.9	46.1
90°-120°	1596.2	11.5
90°-150°	5422.6	39.0
90°-180°	7500.0	53.9
0°-180°	13916.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3116	3116	3116	3116	3116	
5°	3116	3102	3066	3091	3083	296
15°	2964	2933	2837	2784	2756	835
25°	2691	2600	2414	2299	2256	1237
35°	2318	2174	1926	1749	1686	1451
45°	1895	1706	1410	1210	1142	1464
55°	1441	1221	916	747	694	1288
65°	973	744	491	395	386	965
75°	519	321	226	206	203	549
85°	121	62	54	54	54	139
90°	2	29	79	74	77	14
95°	118	141	145	145	141	131
105°	487	493	498	502	502	514
115°	906	919	915	912	906	896
125°	1318	1338	1331	1324	1322	1177
135°	1704	1729	1734	1732	1725	1317
145°	2069	2085	2098	2100	2092	1293
155°	2366	2372	2380	2391	2384	1089
165°	2574	2571	2571	2587	2576	726
175°	2678	2671	2667	2683	2669	254
180°	2683	2683	2683	2683	2683	

TEST NUMBER: P903778

CATALOG NUMBER: DFN2DIP-SQ3F0-080D090US830-RLFL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3116.4	3116.4	3116.4	3116.4	3116.4
2.5°	3130.5	3116.4	3085.3	3113.7	3108.0
5°	3116.4	3102.4	3065.5	3091.0	3082.6
7.5°	3091.0	3074.2	3034.7	3045.8	3031.7
10°	3057.1	3037.4	2981.2	2972.5	2955.7
12.5°	3015.0	2989.6	2913.2	2896.4	2865.3
15°	2964.1	2933.0	2837.2	2783.7	2755.5
17.5°	2904.8	2859.7	2741.2	2679.3	2634.0
20°	2837.2	2780.7	2639.8	2569.5	2507.2
22.5°	2763.9	2699.0	2535.3	2439.6	2397.4
25°	2690.6	2600.3	2414.1	2298.7	2256.2
27.5°	2603.2	2507.2	2301.3	2168.8	2103.8
30°	2510.2	2402.7	2177.2	2033.5	1957.2
32.5°	2419.8	2290.0	2059.0	1889.6	1819.0
35°	2318.4	2174.4	1926.4	1748.7	1686.4
37.5°	2219.6	2064.4	1802.2	1607.4	1537.1
40°	2115.3	1946.2	1672.4	1472.2	1398.8
42.5°	2008.1	1827.7	1542.8	1334.0	1263.6
45°	1895.3	1706.2	1410.2	1209.8	1142.2
47.5°	1788.2	1588.0	1283.4	1082.9	1021.0
50°	1669.6	1469.5	1159.2	964.4	905.4
52.5°	1553.9	1342.3	1040.7	854.6	801.1
55°	1441.1	1221.2	916.5	747.4	693.9
57.5°	1325.6	1099.9	806.7	648.8	603.5
60°	1207.0	981.5	690.9	547.2	502.1
62.5°	1091.6	865.9	592.2	456.9	434.5
65°	973.1	744.4	490.7	395.0	386.3
67.5°	860.3	631.7	395.0	346.8	338.5
70°	741.8	521.9	327.1	298.9	287.6
72.5°	629.0	420.1	273.5	251.1	245.3
75°	518.9	321.4	225.6	205.9	203.2
77.5°	409.1	228.3	177.8	166.4	160.7
80°	307.3	163.7	135.3	124.1	124.1
82.5°	214.2	110.1	93.0	87.4	87.4
85°	121.2	61.9	53.5	53.5	53.5
87.5°	45.1	22.4	22.4	19.8	19.8
90°	2.5	29.1	79.3	74.4	76.8
92.5°	50.1	68.0	70.4	72.8	72.8
95°	118.1	140.7	144.8	144.8	140.7
97.5°	196.5	217.5	226.5	226.5	226.5
100°	287.1	305.8	312.2	312.2	309.8
102.5°	382.6	396.3	405.2	407.6	405.2
105°	486.9	493.3	498.2	502.3	502.3
107.5°	590.4	600.1	600.1	601.7	590.4
110°	690.7	703.7	703.7	703.7	697.2



TEST NUMBER: P903778

CATALOG NUMBER: DFN2DIP-SQ3F0-080D090US830-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	799.1	812.8	810.4	804.0	799.1
115°	905.9	918.8	914.7	912.4	905.9
117.5°	1011.8	1029.6	1018.3	1011.8	1005.3
120°	1118.6	1136.3	1118.6	1118.6	1111.3
122.5°	1215.6	1238.3	1227.0	1220.5	1215.6
125°	1317.6	1337.8	1331.3	1324.0	1321.6
127.5°	1417.0	1442.1	1433.2	1423.5	1417.0
130°	1510.0	1539.2	1535.1	1530.2	1521.4
132.5°	1614.4	1637.0	1638.6	1627.3	1620.9
135°	1704.1	1729.2	1734.1	1731.6	1725.2
137.5°	1804.4	1824.7	1828.7	1827.1	1817.4
140°	1892.6	1912.8	1924.1	1924.1	1915.2
142.5°	1983.2	2003.4	2009.9	2012.3	2003.4
145°	2069.0	2085.1	2098.0	2100.5	2091.6
147.5°	2145.8	2166.0	2175.7	2179.7	2170.9
150°	2225.1	2238.8	2247.7	2254.9	2247.7
152.5°	2295.4	2309.1	2320.4	2329.4	2320.4
155°	2365.8	2372.2	2379.5	2390.9	2383.6
157.5°	2426.4	2431.3	2435.3	2451.5	2440.1
160°	2480.6	2485.5	2487.9	2501.6	2491.9
162.5°	2530.7	2530.7	2533.2	2548.5	2537.2
165°	2573.6	2571.2	2571.2	2587.4	2576.1
167.5°	2612.4	2605.2	2605.2	2621.3	2610.0
170°	2641.6	2635.1	2632.7	2648.8	2635.1
172.5°	2661.7	2655.3	2652.9	2669.1	2655.3
175°	2678.0	2671.4	2666.6	2682.9	2669.1
177.5°	2686.8	2680.4	2675.5	2689.3	2675.5
180°	2682.9	2682.9	2682.9	2682.9	2682.9

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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	11.16	11.96	12.15	12.96	14.29	7.12	7.92	8.12	8.92	10.25
	3H	12.83	13.54	13.84	14.56	15.91	8.30	9.01	9.31	10.03	11.38
	4H	13.43	14.11	14.45	15.13	16.48	8.74	9.42	9.76	10.44	11.79
	6H	13.85	14.47	14.88	15.49	16.86	9.06	9.68	10.09	10.70	12.07
	8H	13.97	14.57	15.01	15.60	16.97	9.14	9.74	10.18	10.77	12.14
	12H	14.03	14.59	15.07	15.62	17.01	9.18	9.75	10.22	10.78	12.16
4H	2H	11.17	11.85	12.20	12.86	14.22	7.71	8.39	8.73	9.40	10.76
	3H	12.99	13.55	14.03	14.60	15.97	9.05	9.61	10.08	10.66	12.03
	4H	13.68	14.19	14.72	15.23	16.62	9.59	10.10	10.63	11.14	12.53
	6H	14.19	14.63	15.24	15.69	17.08	10.00	10.44	11.05	11.50	12.89
	8H	14.36	14.77	15.41	15.82	17.23	10.13	10.54	11.18	11.59	12.99
	12H	14.45	14.82	15.52	15.89	17.30	10.18	10.56	11.25	11.62	13.03
8H	4H	13.64	14.06	14.70	15.11	16.51	9.87	10.28	10.92	11.33	12.73
	6H	14.20	14.54	15.28	15.64	17.04	10.37	10.71	11.45	11.81	13.21
	8H	14.42	14.71	15.50	15.79	17.21	10.56	10.86	11.64	11.94	13.36
	12H	14.55	14.81	15.64	15.89	17.35	10.67	10.93	11.76	12.01	13.47
12H	4H	13.59	13.97	14.66	15.03	16.44	9.87	10.24	10.94	11.31	12.71
	6H	14.18	14.48	15.26	15.55	16.97	10.42	10.72	11.50	11.80	13.22
	8H	14.39	14.66	15.48	15.73	17.19	10.63	10.89	11.71	11.96	13.42

END OF REPORT