

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: P903774

Luminaire Tested: DFN2DIP-SQ3F0-080D080US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903774
REPORT IS A COMBINATION OF REPORTS P899942 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-080D080US830-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

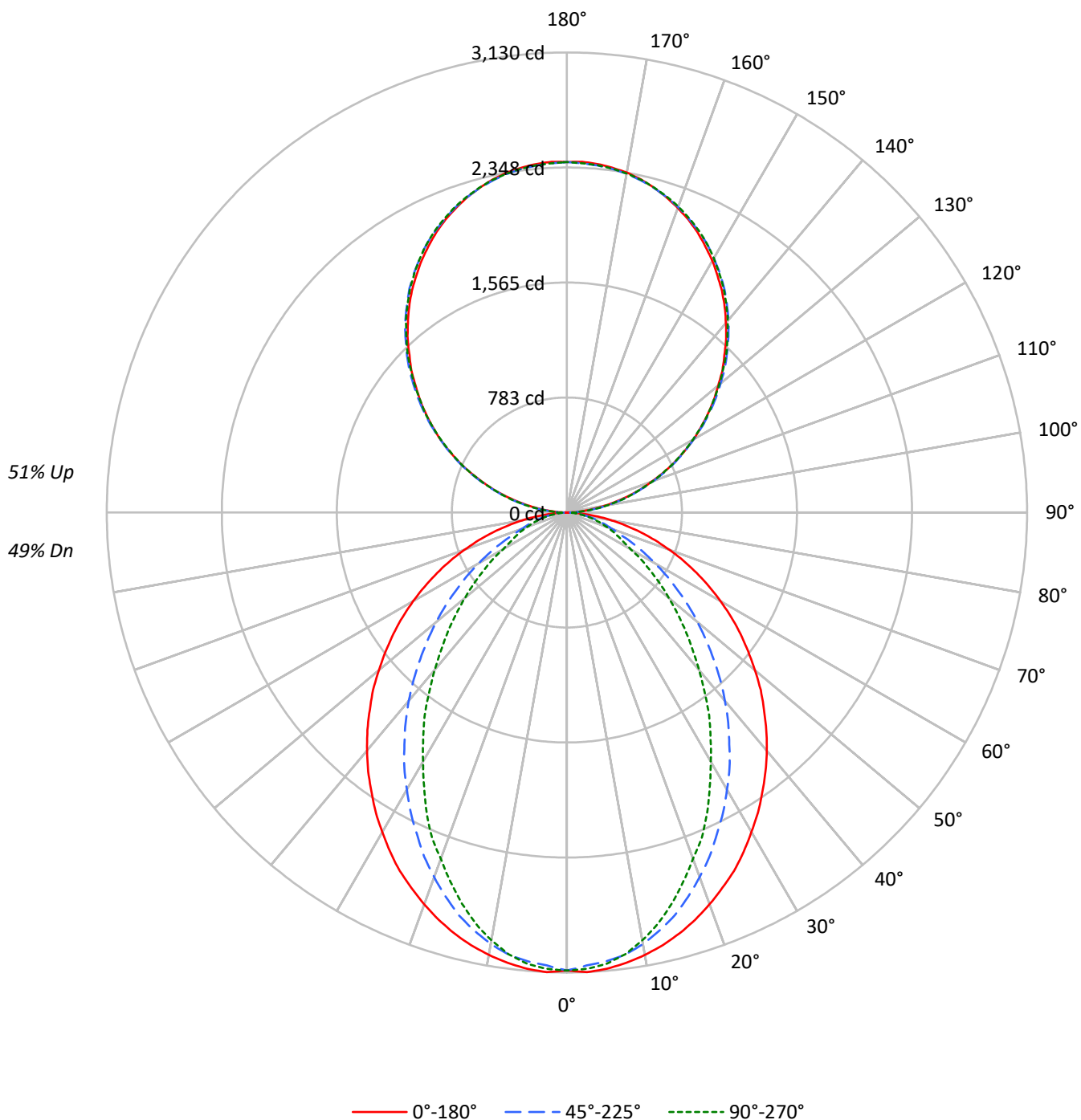
Lumens per Lamp: N/A
Luminaire Lumens: 13082.5 lumens
Efficiency: N/A
Efficacy: 95.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 136.6
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: P903774

CATALOG NUMBER: DFN2DIP-SQ3F0-080D080US830-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P903774

CATALOG NUMBER: DFN2DIP-SQ3F0-080D080US830-RLLFLL

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	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16

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: P903774

CATALOG NUMBER: DFN2DIP-SQ3F0-080D080US830-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	292.1	2.2
10°-20°	801.8	6.1
20°-30°	1125.7	8.6
30°-40°	1227.1	9.4
40°-50°	1127.8	8.6
50°-60°	885.7	6.8
60°-70°	576.5	4.4
70°-80°	296.8	2.3
80°-90°	82.5	0.6
90°-100°	147.6	1.1
100°-110°	468.9	3.6
110°-120°	802.4	6.1
120°-130°	1055.3	8.1
130°-140°	1184.5	9.1
140°-150°	1161.5	8.9
150°-160°	974.4	7.4
160°-170°	646.2	4.9
170°-180°	225.9	1.7
0°-30°	2219.6	17.0
0°-40°	3446.7	26.3
0°-60°	5460.2	41.7
0°-90°	6416.1	49.0
90°-120°	1418.8	10.8
90°-150°	4820.1	36.8
90°-180°	6666.0	51.0
0°-180°	13082.5	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	26	70	66	68	13
95°	105	125	129	129	125	117
105°	433	439	443	446	446	457
115°	805	817	813	811	805	796
125°	1171	1189	1183	1177	1175	1047
135°	1515	1537	1541	1539	1534	1171
145°	1839	1853	1865	1867	1859	1149
155°	2103	2109	2115	2125	2119	968
165°	2288	2286	2286	2300	2290	645
175°	2380	2375	2370	2385	2372	226
180°	2385	2385	2385	2385	2385	

TEST NUMBER: P903774

CATALOG NUMBER: DFN2DIP-SQ3F0-080D080US830-RLLFLL

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°	2.2	25.9	70.5	66.2	68.3
92.5°	44.6	60.4	62.6	64.7	64.7
95°	105.0	125.1	128.7	128.7	125.1
97.5°	174.7	193.4	201.3	201.3	201.3
100°	255.2	271.7	277.5	277.5	275.3
102.5°	340.1	352.3	360.1	362.3	360.1
105°	432.8	438.6	442.9	446.5	446.5
107.5°	524.8	533.5	533.5	534.9	524.8
110°	614.0	625.5	625.5	625.5	619.7

TEST NUMBER: P903774

CATALOG NUMBER: DFN2DIP-SQ3F0-080D080US830-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	710.3	722.6	720.4	714.6	710.3
115°	805.2	816.7	813.1	811.0	805.2
117.5°	899.4	915.2	905.1	899.4	893.6
120°	994.3	1010.1	994.3	994.3	987.8
122.5°	1080.5	1100.7	1090.6	1084.9	1080.5
125°	1171.1	1189.1	1183.4	1176.9	1174.8
127.5°	1259.6	1281.9	1273.9	1265.4	1259.6
130°	1342.3	1368.1	1364.5	1360.3	1352.4
132.5°	1435.0	1455.1	1456.6	1446.5	1440.8
135°	1514.8	1537.1	1541.4	1539.3	1533.5
137.5°	1603.9	1621.9	1625.5	1624.1	1615.4
140°	1682.3	1700.3	1710.3	1710.3	1702.4
142.5°	1762.8	1780.8	1786.6	1788.8	1780.8
145°	1839.1	1853.4	1864.9	1867.1	1859.2
147.5°	1907.3	1925.3	1933.9	1937.6	1929.7
150°	1977.8	1990.0	1997.9	2004.4	1997.9
152.5°	2040.3	2052.6	2062.7	2070.6	2062.7
155°	2102.9	2108.7	2115.2	2125.2	2118.7
157.5°	2156.8	2161.2	2164.7	2179.1	2169.1
160°	2205.0	2209.3	2211.5	2223.6	2215.1
162.5°	2249.6	2249.6	2251.7	2265.4	2255.3
165°	2287.6	2285.5	2285.5	2299.9	2289.8
167.5°	2322.1	2315.7	2315.7	2330.1	2320.0
170°	2348.1	2342.3	2340.1	2354.6	2342.3
172.5°	2366.1	2360.3	2358.1	2372.5	2360.3
175°	2380.4	2374.6	2370.3	2384.7	2372.5
177.5°	2388.3	2382.6	2378.2	2390.5	2378.2
180°	2384.7	2384.7	2384.7	2384.7	2384.7

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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	11.44	12.27	12.42	13.25	14.53	7.40	8.23	8.38	9.21	10.50
	3H	13.12	13.85	14.10	14.84	16.15	8.59	9.32	9.57	10.31	11.62
	4H	13.72	14.42	14.72	15.41	16.73	9.03	9.73	10.03	10.72	12.04
	6H	14.14	14.78	15.15	15.78	17.11	9.35	9.99	10.35	10.99	12.32
	8H	14.26	14.87	15.28	15.89	17.21	9.43	10.04	10.45	11.06	12.38
	12H	14.32	14.90	15.34	15.91	17.26	9.47	10.05	10.49	11.06	12.41
4H	2H	11.46	12.15	12.46	13.15	14.47	8.00	8.69	9.00	9.69	11.00
	3H	13.28	13.86	14.29	14.88	16.21	9.34	9.92	10.35	10.94	12.27
	4H	13.97	14.50	14.99	15.51	16.87	9.88	10.41	10.90	11.42	12.78
	6H	14.48	14.93	15.51	15.97	17.32	10.29	10.75	11.32	11.79	13.14
	8H	14.65	15.08	15.68	16.11	17.47	10.42	10.84	11.45	11.87	13.24
	12H	14.74	15.13	15.79	16.17	17.54	10.48	10.86	11.53	11.91	13.28
8H	4H	13.94	14.36	14.97	15.39	16.76	10.16	10.58	11.19	11.61	12.98
	6H	14.50	14.85	15.55	15.92	17.28	10.67	11.02	11.72	12.09	13.45
	8H	14.71	15.02	15.77	16.08	17.46	10.85	11.16	11.91	12.22	13.60
	12H	14.84	15.11	15.91	16.17	17.59	10.97	11.24	12.03	12.29	13.72
12H	4H	13.89	14.27	14.94	15.32	16.69	10.16	10.54	11.21	11.59	12.96
	6H	14.47	14.78	15.53	15.84	17.22	10.71	11.02	11.78	12.08	13.46
	8H	14.69	14.96	15.75	16.01	17.44	10.92	11.19	11.98	12.24	13.67