

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: P903639

Luminaire Tested: DFN2DIP-SQ3F0-040D100US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903639
REPORT IS A COMBINATION OF REPORTS P901490 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-040D100US830-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

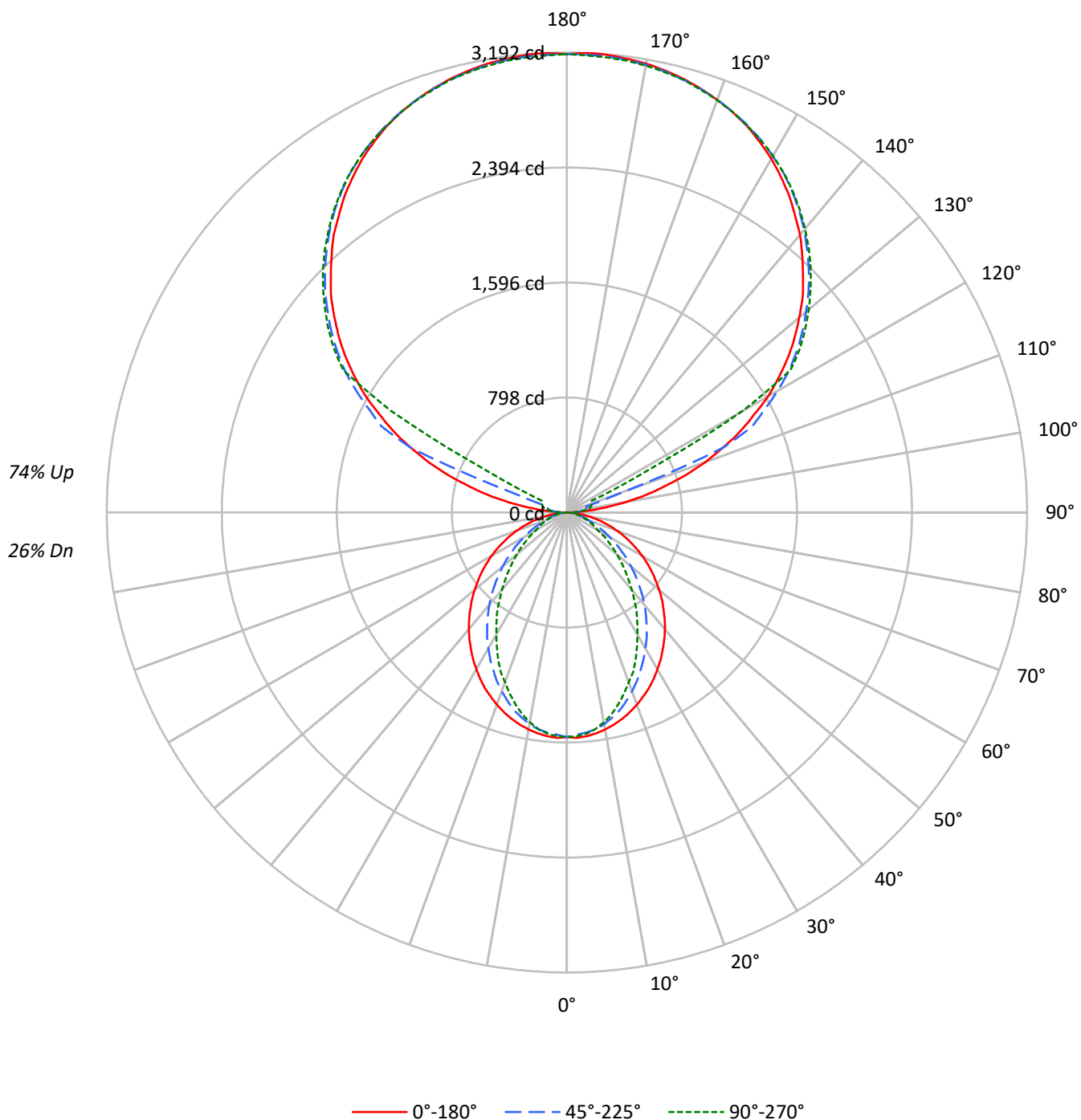
Lumens per Lamp: N/A
Luminaire Lumens: 12535.8 lumens
Efficiency: N/A
Efficacy: 114.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 109.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	101	101	101	101	90	90	90	90	70	70	70	51	51	51	34	34	34
1	93	88	85	82	82	79	76	73	61	59	58	45	44	43	30	29	29
2	84	77	72	67	75	69	65	60	54	51	48	40	38	36	27	26	25
3	77	68	61	56	69	61	55	51	48	44	41	35	33	31	24	23	21
4	71	60	53	47	63	54	48	43	43	38	35	32	29	26	22	20	19
5	65	54	46	41	58	48	42	37	38	33	30	28	25	23	19	18	16
6	60	48	41	35	53	43	37	32	34	30	26	26	23	20	18	16	14
7	55	43	36	31	49	39	33	28	31	26	23	23	20	18	16	14	13
8	51	39	32	27	45	36	29	25	28	24	20	21	18	16	15	13	12
9	47	36	29	24	42	32	26	22	26	21	18	20	16	14	14	12	10
10	44	33	26	21	39	30	24	20	24	19	16	18	15	13	13	11	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1785	1785	1785
5°	1787	1756	1768
10°	1768	1720	1710
15°	1743	1662	1620
20°	1709	1583	1511
25°	1675	1494	1405
30°	1630	1403	1271
35°	1585	1305	1153
40°	1540	1204	1018
45°	1487	1092	896
50°	1432	979	777
55°	1375	859	662
60°	1309	733	545
65°	1233	605	489
70°	1140	486	442
75°	1024	426	401
80°	855	354	346
85°	580	231	257

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2177 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.0	1.2
10°-20°	400.9	3.2
20°-30°	562.8	4.5
30°-40°	613.5	4.9
40°-50°	563.9	4.5
50°-60°	442.9	3.5
60°-70°	288.3	2.3
70°-80°	148.4	1.2
80°-90°	43.5	0.3
90°-100°	104.9	0.8
100°-110°	391.0	3.1
110°-120°	1037.0	8.3
120°-130°	1720.0	13.7
130°-140°	1827.0	14.6
140°-150°	1698.0	13.5
150°-160°	1365.2	10.9
160°-170°	879.7	7.0
170°-180°	302.8	2.4
0°-30°	1109.8	8.9
0°-40°	1723.3	13.7
0°-60°	2730.1	21.8
0°-90°	3210.2	25.6
90°-120°	1532.9	12.2
90°-150°	6778.0	54.1
90°-180°	9326.0	74.4
0°-180°	12535.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1558	1558	1558	1558	1558	
5°	1558	1551	1533	1546	1541	148
15°	1482	1466	1419	1392	1378	418
25°	1345	1300	1207	1149	1128	619
35°	1159	1087	963	874	843	726
45°	948	853	705	605	571	732
55°	721	611	458	374	347	644
65°	486	372	245	198	193	482
75°	259	161	113	103	102	274
85°	61	31	27	27	27	70
90°	2	28	46	58	62	12
95°	150	74	90	101	99	177
105°	700	769	140	166	175	748
115°	1323	1362	1420	354	189	1303
125°	1871	1901	1945	1961	1968	1669
135°	2316	2352	2373	2396	2392	1789
145°	2686	2684	2723	2739	2728	1680
155°	2958	2937	2965	2978	2960	1363
165°	3116	3103	3110	3126	3110	880
175°	3188	3172	3176	3192	3170	303
180°	3181	3181	3181	3181	3181	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1558.2	1558.2	1558.2	1558.2	1558.2
2.5°	1565.3	1558.2	1542.7	1556.9	1554.0
5°	1558.2	1551.1	1532.8	1545.5	1541.3
7.5°	1545.5	1537.1	1517.4	1522.9	1515.9
10°	1528.6	1518.7	1490.5	1486.2	1477.9
12.5°	1507.5	1494.8	1456.6	1448.2	1432.7
15°	1482.1	1466.5	1418.6	1391.9	1377.8
17.5°	1452.5	1429.8	1370.6	1339.6	1317.0
20°	1418.6	1390.3	1319.8	1284.7	1253.6
22.5°	1382.0	1349.5	1267.6	1219.7	1198.7
25°	1345.3	1300.1	1207.0	1149.3	1128.0
27.5°	1301.7	1253.6	1150.7	1084.4	1051.9
30°	1255.1	1201.4	1088.5	1016.7	978.6
32.5°	1209.9	1145.0	1029.4	944.8	909.5
35°	1159.2	1087.2	963.2	874.3	843.2
37.5°	1109.8	1032.2	901.1	803.7	768.5
40°	1057.6	973.1	836.2	736.1	699.5
42.5°	1004.0	913.8	771.4	666.9	631.8
45°	947.6	853.1	705.1	604.9	571.1
47.5°	894.1	794.0	641.7	541.5	510.5
50°	834.8	734.7	579.6	482.2	452.7
52.5°	776.9	671.2	520.4	427.3	400.5
55°	720.6	610.6	458.3	373.7	346.9
57.5°	662.8	550.0	403.3	324.3	301.8
60°	603.5	490.7	345.4	273.6	251.1
62.5°	545.8	433.0	296.1	228.5	217.3
65°	486.5	372.2	245.3	197.5	193.1
67.5°	430.2	315.8	197.5	173.4	169.2
70°	370.9	260.9	163.5	149.5	143.7
72.5°	314.5	210.1	136.8	125.5	122.7
75°	259.4	160.7	112.8	102.9	101.6
77.5°	204.5	114.1	88.9	83.2	80.3
80°	153.6	81.8	67.6	62.1	62.1
82.5°	107.2	55.0	46.6	43.6	43.6
85°	60.6	31.0	26.8	26.8	26.8
87.5°	22.6	11.2	11.2	9.9	9.9
90°	2.2	27.6	45.9	57.7	62.0
92.5°	57.7	48.4	55.2	59.9	62.0
95°	149.5	73.5	89.6	101.4	99.0
97.5°	269.2	80.6	117.3	124.3	126.6
100°	407.6	92.1	131.2	149.5	154.2
102.5°	559.2	554.9	135.8	161.0	168.1
105°	699.7	768.8	140.5	165.6	174.9
107.5°	863.2	920.6	145.2	170.3	179.6
110°	1019.7	1067.9	402.8	172.8	181.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1167.1	1208.3	1169.3	177.1	184.3
115°	1323.4	1362.5	1420.2	354.5	188.9
117.5°	1459.2	1505.2	1544.5	1215.2	612.3
120°	1611.3	1645.7	1687.2	1714.9	1404.1
122.5°	1740.0	1776.9	1823.1	1836.7	1839.2
125°	1871.2	1901.3	1945.0	1961.1	1967.9
127.5°	1990.9	2023.2	2057.9	2080.9	2083.0
130°	2103.8	2140.7	2165.9	2191.2	2189.1
132.5°	2218.8	2248.9	2274.1	2294.8	2292.6
135°	2315.6	2352.5	2373.0	2396.2	2391.6
137.5°	2416.8	2444.4	2467.6	2490.6	2483.7
140°	2515.6	2534.3	2559.4	2580.2	2568.7
142.5°	2598.8	2614.9	2644.7	2663.0	2651.6
145°	2686.2	2683.8	2722.9	2739.0	2727.5
147.5°	2761.9	2755.1	2794.2	2805.7	2796.7
150°	2835.7	2819.6	2856.6	2870.2	2858.7
152.5°	2897.8	2879.5	2914.0	2927.8	2911.7
155°	2957.7	2937.2	2964.8	2978.4	2960.1
157.5°	3006.1	2987.8	3008.5	3024.6	3006.1
160°	3047.6	3033.7	3047.6	3061.3	3045.2
162.5°	3084.2	3070.5	3082.0	3098.1	3077.4
165°	3116.4	3102.8	3109.6	3125.8	3109.6
167.5°	3141.9	3127.9	3135.1	3151.2	3130.4
170°	3162.6	3148.8	3153.4	3169.5	3148.8
172.5°	3176.3	3162.6	3167.3	3183.4	3162.6
175°	3187.8	3171.7	3176.3	3192.5	3169.5
177.5°	3192.5	3176.3	3178.8	3194.9	3174.1
180°	3181.0	3181.0	3181.0	3181.0	3181.0

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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	6.25	6.92	7.40	8.05	9.63	2.21	2.88	3.36	4.01	5.59
	3H	7.91	8.51	9.07	9.65	11.24	3.38	3.97	4.53	5.12	6.71
	4H	8.51	9.07	9.67	10.21	11.82	3.82	4.38	4.98	5.52	7.13
	6H	8.92	9.44	10.09	10.58	12.19	4.13	4.64	5.30	5.79	7.40
	8H	9.04	9.53	10.21	10.69	12.30	4.21	4.70	5.38	5.86	7.47
	12H	9.09	9.56	10.27	10.71	12.34	4.24	4.71	5.42	5.86	7.49
4H	2H	6.25	6.81	7.42	7.95	9.56	2.78	3.35	3.95	4.49	6.09
	3H	8.06	8.53	9.23	9.69	11.31	4.11	4.58	5.29	5.75	7.36
	4H	8.74	9.17	9.91	10.32	11.96	4.65	5.08	5.82	6.23	7.87
	6H	9.24	9.61	10.42	10.79	12.41	5.05	5.42	6.23	6.60	8.22
	8H	9.41	9.75	10.59	10.92	12.56	5.17	5.52	6.35	6.69	8.33
	12H	9.49	9.81	10.69	10.99	12.63	5.23	5.54	6.42	6.72	8.36
8H	4H	8.69	9.04	9.87	10.20	11.85	4.91	5.26	6.09	6.43	8.07
	6H	9.25	9.53	10.45	10.74	12.38	5.42	5.70	6.62	6.91	8.55
	8H	9.46	9.71	10.66	10.89	12.55	5.60	5.85	6.81	7.04	8.69
	12H	9.59	9.80	10.79	10.99	12.68	5.71	5.92	6.92	7.11	8.80
12H	4H	8.64	8.95	9.83	10.13	11.77	4.91	5.22	6.10	6.40	8.05
	6H	9.22	9.47	10.42	10.66	12.31	5.46	5.71	6.67	6.90	8.56
	8H	9.43	9.65	10.64	10.83	12.52	5.66	5.88	6.87	7.06	8.75

END OF REPORT