

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: P903638

Luminaire Tested: DFN2DIP-SQ3F0-040D100US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903638
REPORT IS A COMBINATION OF REPORTS P899970 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-040D100US830-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

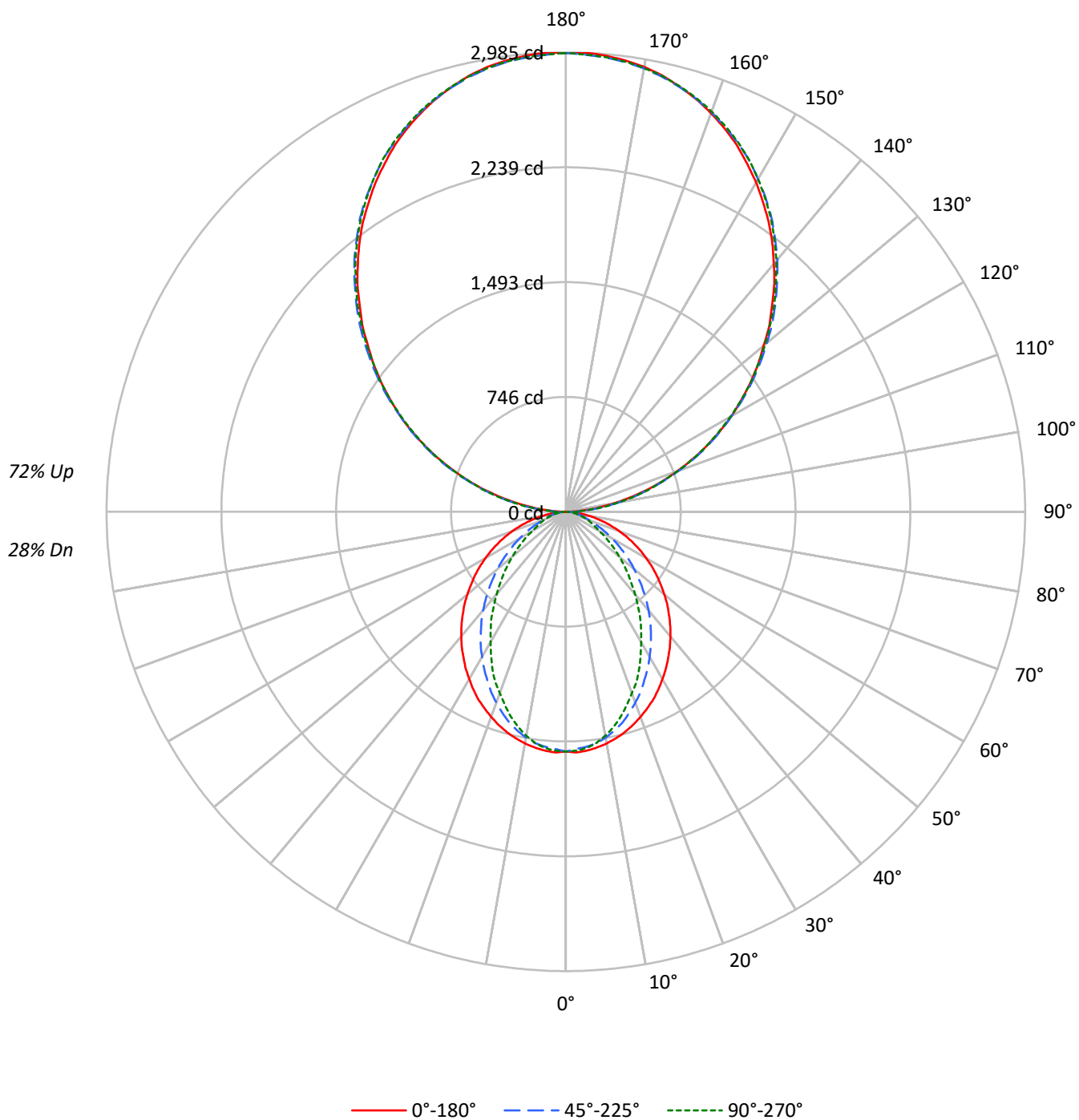
Lumens per Lamp: N/A
Luminaire Lumens: 11546.1 lumens
Efficiency: N/A
Efficacy: 105.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Indirect

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

TEST NUMBER: P903638

CATALOG NUMBER: DFN2DIP-SQ3F0-040D100US830-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P903638

CATALOG NUMBER: DFN2DIP-SQ3F0-040D100US830-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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36
1	93	89	85	82	83	80	77	74	62	60	59	47	45	44	32	31	31
2	85	78	72	67	76	70	65	61	55	52	49	41	39	37	28	27	26
3	78	69	62	56	69	62	56	51	49	45	41	37	34	32	25	24	23
4	71	61	53	48	63	55	48	44	43	39	35	33	30	27	23	21	20
5	65	54	47	41	58	49	42	37	39	34	31	29	26	24	21	19	17
6	60	49	41	35	54	44	37	32	35	30	27	27	23	21	19	17	15
7	55	44	36	31	50	40	33	28	32	27	23	24	21	19	17	15	14
8	51	40	32	27	46	36	30	25	29	24	21	22	19	16	16	14	12
9	48	36	29	24	43	33	27	22	26	22	19	20	17	15	15	13	11
10	45	33	26	22	40	30	24	20	24	20	17	19	16	13	14	12	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: 2999 cd/sqm

TEST NUMBER: P903638

CATALOG NUMBER: DFN2DIP-SQ3F0-040D100US830-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.0	1.3
10°-20°	400.9	3.5
20°-30°	562.8	4.9
30°-40°	613.5	5.3
40°-50°	563.9	4.9
50°-60°	442.9	3.8
60°-70°	288.3	2.5
70°-80°	148.4	1.3
80°-90°	46.3	0.4
90°-100°	184.5	1.6
100°-110°	586.1	5.1
110°-120°	1003.0	8.7
120°-130°	1319.1	11.4
130°-140°	1480.6	12.8
140°-150°	1451.9	12.6
150°-160°	1217.9	10.5
160°-170°	807.7	7.0
170°-180°	282.3	2.4
0°-30°	1109.8	9.6
0°-40°	1723.3	14.9
0°-60°	2730.1	23.6
0°-90°	3213.1	27.8
90°-120°	1773.5	15.4
90°-150°	6025.1	52.2
90°-180°	8333.0	72.2
0°-180°	11546.1	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°	3	32	88	83	85	11
95°	131	156	161	161	156	146
105°	541	548	554	558	558	571
115°	1006	1021	1016	1014	1006	996
125°	1464	1486	1479	1471	1468	1308
135°	1894	1921	1927	1924	1917	1464
145°	2299	2317	2331	2334	2324	1436
155°	2629	2636	2644	2656	2648	1210
165°	2860	2857	2857	2875	2862	807
175°	2976	2968	2963	2981	2966	283
180°	2981	2981	2981	2981	2981	

TEST NUMBER: P903638

CATALOG NUMBER: DFN2DIP-SQ3F0-040D100US830-RLFL

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°	2.7	32.3	88.0	82.7	85.4
92.5°	55.7	75.5	78.2	80.9	80.9
95°	131.2	156.4	160.9	160.9	156.4
97.5°	218.4	241.8	251.7	251.7	251.7
100°	319.1	339.7	346.9	346.9	344.2
102.5°	425.1	440.4	450.3	452.9	450.3
105°	541.0	548.2	553.6	558.1	558.1
107.5°	656.0	666.8	666.8	668.6	656.0
110°	767.5	781.8	781.8	781.8	774.7

TEST NUMBER: P903638

CATALOG NUMBER: DFN2DIP-SQ3F0-040D100US830-RLFL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	887.9	903.1	900.5	893.2	887.9
115°	1006.5	1020.9	1016.4	1013.7	1006.5
117.5°	1124.3	1144.1	1131.4	1124.3	1117.0
120°	1242.8	1262.6	1242.8	1242.8	1234.8
122.5°	1350.7	1375.8	1363.3	1356.1	1350.7
125°	1464.0	1486.4	1479.2	1471.1	1468.5
127.5°	1574.5	1602.3	1592.4	1581.7	1574.5
130°	1677.8	1710.1	1705.7	1700.3	1690.4
132.5°	1793.8	1818.9	1820.7	1808.2	1800.9
135°	1893.5	1921.4	1926.7	1924.1	1916.8
137.5°	2005.0	2027.4	2031.9	2030.1	2019.3
140°	2102.9	2125.3	2138.0	2138.0	2128.1
142.5°	2203.6	2226.0	2233.2	2235.9	2226.0
145°	2298.8	2316.8	2331.2	2333.8	2323.9
147.5°	2384.2	2406.7	2417.4	2422.0	2412.1
150°	2472.3	2487.6	2497.5	2505.5	2497.5
152.5°	2550.4	2565.7	2578.3	2588.2	2578.3
155°	2628.7	2635.8	2643.9	2656.5	2648.4
157.5°	2696.0	2701.4	2705.9	2723.9	2711.3
160°	2756.3	2761.6	2764.3	2779.6	2768.8
162.5°	2812.0	2812.0	2814.6	2831.7	2819.1
165°	2859.6	2856.8	2856.8	2874.8	2862.3
167.5°	2902.7	2894.6	2894.6	2912.6	2900.0
170°	2935.1	2927.9	2925.2	2943.2	2927.9
172.5°	2957.5	2950.3	2947.6	2965.6	2950.3
175°	2975.5	2968.3	2963.0	2980.9	2965.6
177.5°	2985.4	2978.2	2972.8	2988.0	2972.8
180°	2980.9	2980.9	2980.9	2980.9	2980.9

TEST NUMBER: P903638

CATALOG NUMBER: DFN2DIP-SQ3F0-040D100US830-RLFL

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	6.58	7.26	7.72	8.38	9.94	2.54	3.22	3.67	4.34	5.90
	3H	8.25	8.85	9.38	9.98	11.55	3.71	4.32	4.85	5.45	7.02
	4H	8.84	9.42	9.99	10.55	12.13	4.15	4.73	5.30	5.86	7.43
	6H	9.25	9.78	10.41	10.91	12.50	4.46	4.99	5.62	6.12	7.71
	8H	9.37	9.88	10.53	11.02	12.60	4.54	5.05	5.70	6.19	7.77
	12H	9.43	9.90	10.59	11.04	12.65	4.58	5.05	5.74	6.19	7.80
4H	2H	6.58	7.16	7.74	8.28	9.86	3.12	3.69	4.27	4.82	6.40
	3H	8.39	8.87	9.55	10.02	11.61	4.45	4.92	5.61	6.08	7.67
	4H	9.07	9.51	10.24	10.66	12.27	4.98	5.42	6.15	6.57	8.18
	6H	9.58	9.95	10.74	11.12	12.72	5.39	5.76	6.56	6.93	8.53
	8H	9.74	10.10	10.91	11.25	12.87	5.51	5.86	6.68	7.02	8.63
	12H	9.83	10.15	11.01	11.32	12.94	5.56	5.88	6.75	7.05	8.67
8H	4H	9.03	9.38	10.20	10.54	12.15	5.25	5.60	6.42	6.76	8.37
	6H	9.58	9.87	10.77	11.07	12.69	5.75	6.04	6.94	7.24	8.86
	8H	9.80	10.05	10.99	11.23	12.86	5.94	6.19	7.13	7.37	9.00
	12H	9.92	10.15	11.12	11.32	12.99	6.04	6.27	7.24	7.44	9.11
12H	4H	8.97	9.29	10.16	10.46	12.08	5.25	5.56	6.43	6.73	8.35
	6H	9.56	9.81	10.75	10.99	12.62	5.80	6.05	6.99	7.23	8.86
	8H	9.77	9.99	10.96	11.16	12.83	6.00	6.22	7.19	7.39	9.06

END OF REPORT