

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: P903861

Luminaire Tested: DFN2DIP-SQ3F0-100D120US830-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903861
REPORT IS A COMBINATION OF REPORTS P901537 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-100D120US830-FLLONL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

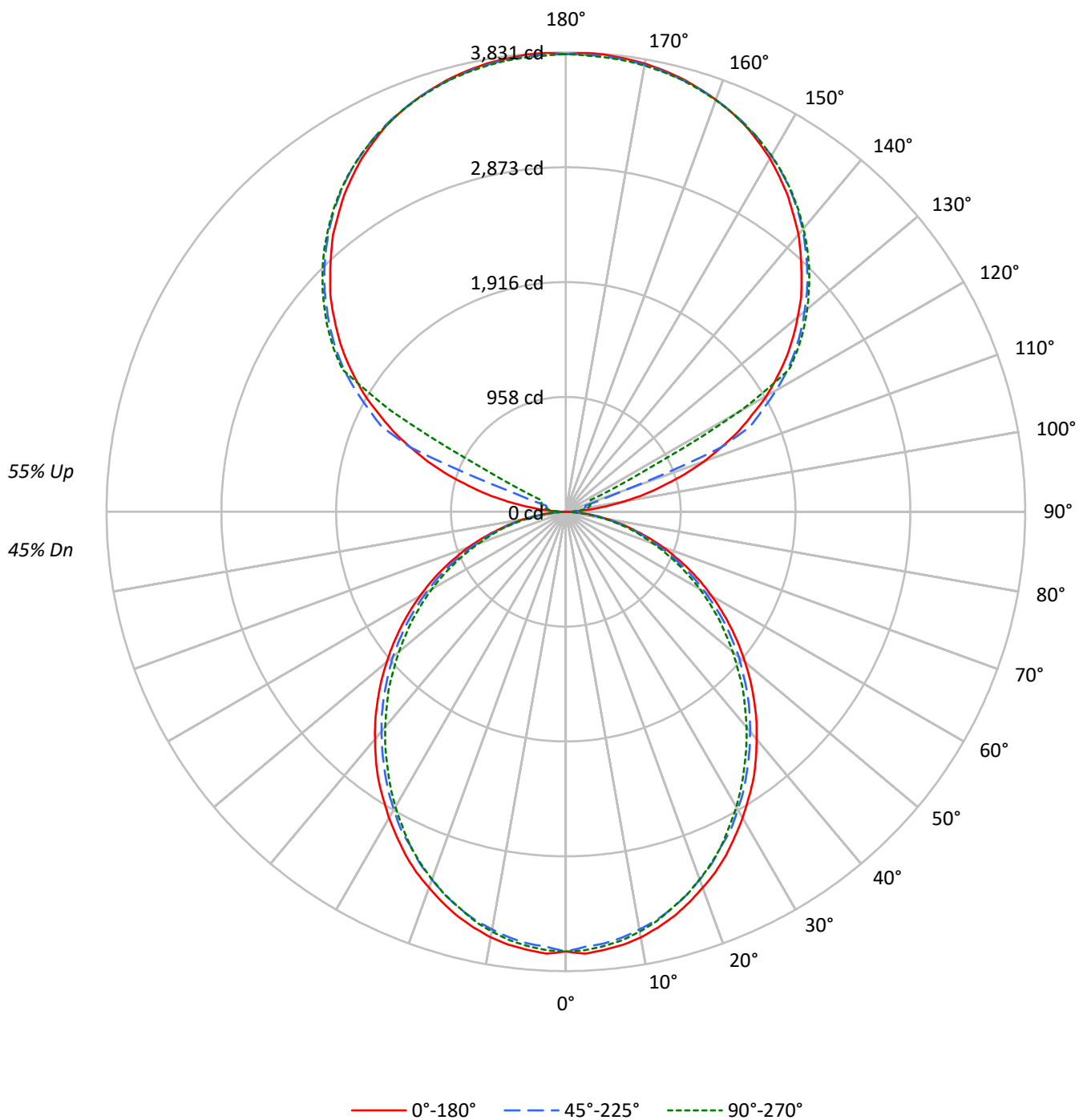
Lumens per Lamp: N/A
Luminaire Lumens: 20528.6 lumens
Efficiency: N/A
Efficacy: 106.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 192.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P903861

CATALOG NUMBER: DFN2DIP-SQ3F0-100D120US830-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P903861

CATALOG NUMBER: DFN2DIP-SQ3F0-100D120US830-FLONL

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	52	52	52
1	97	92	89	85	89	85	82	79	71	68	66	58	56	55	46	45	44
2	88	81	75	70	81	74	69	65	62	58	55	51	48	46	40	39	37
3	80	71	64	58	73	65	59	54	55	50	46	45	42	39	36	33	31
4	74	63	55	49	67	58	51	46	49	43	39	40	36	33	32	29	27
5	67	56	48	42	62	52	45	39	43	38	34	36	32	29	29	26	24
6	62	50	42	36	57	46	39	34	39	34	30	32	28	25	26	23	21
7	57	45	37	32	53	42	35	30	35	30	26	30	25	22	24	21	18
8	53	41	33	28	49	38	31	26	32	27	23	27	23	20	22	19	17
9	50	37	30	25	45	35	28	24	30	24	21	25	21	18	20	17	15
10	46	34	27	22	42	32	25	21	27	22	19	23	19	16	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4202	4202	4202
5°	4206	4141	4170
10°	4170	4082	4112
15°	4106	4012	4023
20°	4020	3916	3931
25°	3935	3802	3825
30°	3829	3695	3691
35°	3728	3570	3549
40°	3604	3443	3414
45°	3481	3316	3276
50°	3346	3182	3116
55°	3205	3027	2969
60°	3044	2844	2800
65°	2869	2654	2601
70°	2646	2422	2386
75°	2338	2144	2185
80°	1964	1789	1806
85°	1383	1185	1183

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3481 cd/sqm

TEST NUMBER: P903861

CATALOG NUMBER: DFN2DIP-SQ3F0-100D120US830-FLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	345.2	1.7
10°-20°	971.2	4.7
20°-30°	1427.3	7.0
30°-40°	1657.7	8.1
40°-50°	1655.7	8.1
50°-60°	1443.7	7.0
60°-70°	1067.2	5.2
70°-80°	603.8	2.9
80°-90°	166.1	0.8
90°-100°	125.9	0.6
100°-110°	469.2	2.3
110°-120°	1244.4	6.1
120°-130°	2064.0	10.1
130°-140°	2192.4	10.7
140°-150°	2037.6	9.9
150°-160°	1638.2	8.0
160°-170°	1055.6	5.1
170°-180°	363.3	1.8
0°-30°	2743.7	13.4
0°-40°	4401.4	21.4
0°-60°	7500.8	36.5
0°-90°	9337.9	45.5
90°-120°	1839.5	9.0
90°-150°	8133.6	39.6
90°-180°	11191.0	54.5
0°-180°	20528.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3668	3668	3668	3668	3668	
5°	3668	3654	3615	3643	3636	348
15°	3491	3470	3424	3438	3421	983
25°	3160	3132	3072	3078	3072	1454
35°	2726	2691	2634	2613	2596	1702
45°	2218	2194	2140	2102	2088	1712
55°	1679	1658	1615	1573	1555	1501
65°	1132	1111	1076	1044	1026	1119
75°	592	586	568	547	554	632
85°	144	141	138	127	124	161
90°	3	33	55	69	74	19
95°	179	88	108	122	119	212
105°	840	923	169	199	210	897
115°	1588	1635	1704	425	227	1563
125°	2245	2282	2334	2353	2362	2003
135°	2779	2823	2848	2876	2870	2146
145°	3224	3221	3267	3287	3273	2016
155°	3549	3524	3558	3574	3552	1635
165°	3740	3723	3732	3751	3732	1057
175°	3825	3806	3812	3831	3803	364
180°	3817	3817	3817	3817	3817	

TEST NUMBER: P903861

CATALOG NUMBER: DFN2DIP-SQ3F0-100D120US830-FLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3667.5	3667.5	3667.5	3667.5	3667.5
2.5°	3688.8	3671.2	3632.3	3667.5	3660.7
5°	3667.5	3653.7	3614.7	3642.8	3636.0
7.5°	3642.8	3621.8	3582.9	3611.4	3604.3
10°	3604.3	3579.6	3537.3	3565.4	3554.9
12.5°	3551.1	3530.2	3487.9	3505.5	3498.3
15°	3491.3	3470.3	3424.3	3438.5	3421.0
17.5°	3417.2	3396.3	3350.2	3367.8	3350.2
20°	3335.9	3315.0	3265.6	3276.1	3262.2
22.5°	3255.2	3223.4	3177.3	3177.3	3170.2
25°	3159.8	3131.7	3071.8	3078.5	3071.8
27.5°	3053.8	3029.1	2983.5	2973.1	2955.4
30°	2948.4	2919.9	2867.1	2856.7	2842.4
32.5°	2835.4	2814.4	2757.9	2736.6	2722.3
35°	2726.1	2691.0	2634.4	2613.1	2595.5
37.5°	2602.6	2570.8	2514.3	2489.6	2472.0
40°	2475.8	2447.3	2390.9	2359.5	2345.2
42.5°	2352.3	2323.8	2267.8	2232.2	2211.3
45°	2218.4	2193.7	2140.5	2102.0	2087.8
47.5°	2087.8	2063.1	2006.6	1967.7	1946.7
50°	1950.1	1932.5	1883.1	1833.7	1816.2
52.5°	1816.2	1791.5	1745.8	1706.9	1682.2
55°	1678.9	1657.6	1615.2	1572.9	1555.4
57.5°	1541.2	1523.5	1477.5	1435.3	1421.1
60°	1403.4	1389.6	1340.2	1301.3	1290.8
62.5°	1269.5	1244.8	1209.7	1174.5	1160.3
65°	1132.2	1110.9	1075.7	1043.9	1026.3
67.5°	991.2	973.2	941.8	917.1	902.9
70°	860.5	846.3	814.5	789.9	776.0
72.5°	726.6	712.4	694.8	670.1	659.6
75°	592.3	585.6	567.6	546.7	553.7
77.5°	472.6	458.4	451.2	440.7	430.3
80°	352.8	349.1	342.0	331.5	324.4
82.5°	239.9	239.9	236.5	222.3	222.3
85°	144.4	141.1	137.7	126.9	123.5
87.5°	63.6	56.5	49.4	38.9	35.2
90°	2.6	33.1	55.1	69.2	74.5
92.5°	69.2	58.1	66.3	71.8	74.5
95°	179.4	88.2	107.5	121.7	118.8
97.5°	323.1	96.8	140.7	149.2	151.8
100°	489.0	110.6	157.4	179.4	185.0
102.5°	671.1	665.8	163.0	193.2	201.7
105°	839.6	922.7	168.6	198.8	209.9
107.5°	1035.8	1104.7	174.2	204.3	215.5
110°	1223.7	1281.5	483.4	207.3	218.1

TEST NUMBER: P903861

CATALOG NUMBER: DFN2DIP-SQ3F0-100D120US830-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1400.5	1450.0	1403.2	212.5	221.0
115°	1588.1	1635.0	1704.2	425.4	226.7
117.5°	1751.1	1806.3	1853.5	1458.2	734.7
120°	1933.5	1974.8	2024.7	2057.9	1684.9
122.5°	2088.0	2132.3	2187.7	2204.1	2207.1
125°	2245.4	2281.5	2334.0	2353.3	2361.5
127.5°	2389.1	2427.8	2469.5	2497.0	2499.6
130°	2524.5	2568.8	2599.0	2629.5	2626.9
132.5°	2662.6	2698.7	2728.8	2753.8	2751.2
135°	2778.7	2823.0	2847.6	2875.5	2869.9
137.5°	2900.1	2933.2	2961.1	2988.6	2980.4
140°	3018.9	3041.1	3071.3	3096.3	3082.5
142.5°	3118.5	3137.9	3173.6	3195.6	3181.8
145°	3223.5	3220.6	3267.4	3286.8	3273.0
147.5°	3314.4	3306.2	3353.1	3366.9	3356.0
150°	3402.9	3383.5	3427.8	3444.2	3430.5
152.5°	3477.3	3455.4	3496.7	3513.4	3494.1
155°	3549.1	3524.5	3557.7	3574.1	3552.2
157.5°	3607.2	3585.2	3610.2	3629.5	3607.2
160°	3657.1	3640.4	3657.1	3673.5	3654.1
162.5°	3701.1	3684.7	3698.4	3717.8	3692.9
165°	3739.7	3723.3	3731.5	3750.9	3731.5
167.5°	3770.3	3753.5	3762.1	3781.4	3756.5
170°	3795.1	3778.5	3784.0	3803.3	3778.5
172.5°	3811.5	3795.1	3800.8	3820.1	3795.1
175°	3825.3	3806.0	3811.5	3831.0	3803.3
177.5°	3831.0	3811.5	3814.6	3833.9	3809.0
180°	3817.2	3817.2	3817.2	3817.2	3817.2

TEST NUMBER: P903861

CATALOG NUMBER: DFN2DIP-SQ3F0-100D120US830-FLONL

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	11.79	12.62	12.79	13.62	14.96	11.35	12.17	12.34	13.18	14.51
	3H	13.45	14.18	14.45	15.20	16.55	12.96	13.69	13.96	14.71	16.06
	4H	14.03	14.73	15.05	15.75	17.11	13.54	14.23	14.55	15.25	16.61
	6H	14.42	15.07	15.45	16.09	17.47	13.92	14.57	14.95	15.59	16.96
	8H	14.53	15.14	15.56	16.18	17.55	14.02	14.64	15.06	15.68	17.05
	12H	14.57	15.15	15.61	16.19	17.58	14.06	14.64	15.10	15.68	17.07
4H	2H	12.25	12.94	13.27	13.96	15.33	11.89	12.59	12.92	13.61	14.97
	3H	14.10	14.69	15.14	15.73	17.11	13.70	14.28	14.73	15.32	16.70
	4H	14.81	15.35	15.85	16.38	17.78	14.39	14.92	15.43	15.96	17.36
	6H	15.32	15.78	16.37	16.84	18.24	14.89	15.35	15.94	16.41	17.80
	8H	15.47	15.90	16.52	16.95	18.36	15.03	15.46	16.08	16.51	17.92
	12H	15.54	15.92	16.61	16.99	18.41	15.09	15.47	16.16	16.54	17.96
8H	4H	15.00	15.43	16.05	16.48	17.89	14.62	15.05	15.68	16.11	17.52
	6H	15.62	15.98	16.70	17.08	18.48	15.24	15.60	16.32	16.69	18.10
	8H	15.84	16.15	16.92	17.23	18.66	15.45	15.76	16.53	16.84	18.27
	12H	15.97	16.24	17.05	17.32	18.78	15.56	15.83	16.64	16.91	18.37
12H	4H	14.98	15.37	16.05	16.44	17.86	14.62	15.00	15.68	16.07	17.49
	6H	15.65	15.96	16.73	17.04	18.47	15.28	15.59	16.36	16.67	18.10
	8H	15.89	16.16	16.97	17.24	18.71	15.51	15.78	16.59	16.86	18.32

END OF REPORT