

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: P903935

Luminaire Tested: DFN2DIP-SQ3F0-120D120US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903935
REPORT IS A COMBINATION OF REPORTS P901542 AND P898289
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-120D120US830-RLLONL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

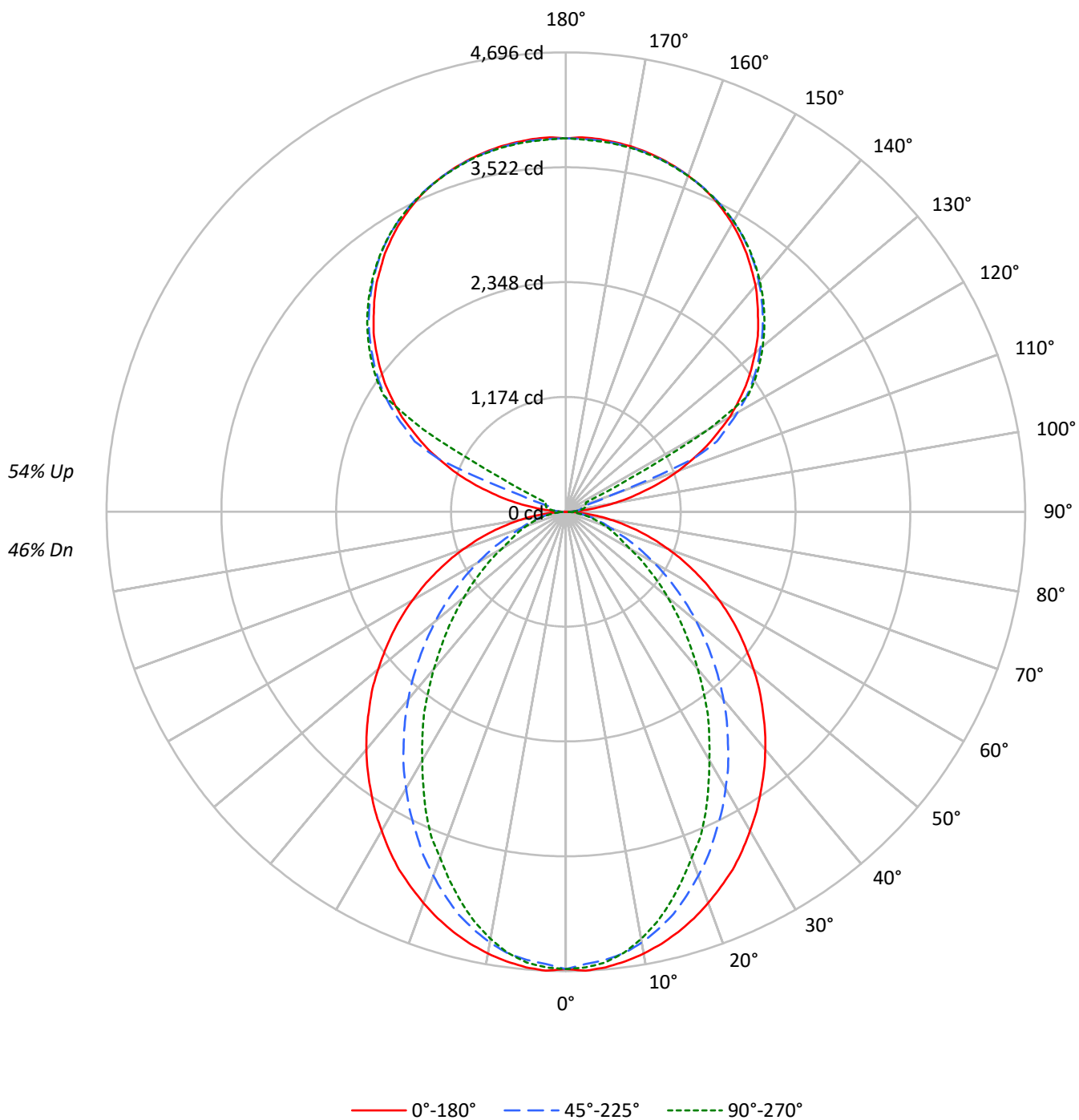
Lumens per Lamp: N/A
Luminaire Lumens: 20811.3 lumens
Efficiency: N/A
Efficacy: 94.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 219.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P903935

CATALOG NUMBER: DFN2DIP-SQ3F0-120D120US830-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P903935

CATALOG NUMBER: DFN2DIP-SQ3F0-120D120US830-RLONL

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	50	30	10
RCR																				
0	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53			46
1	97	93	90	86	89	86	83	80	72	70	68	59	58	56	47	46	45			40
2	89	82	76	71	82	76	70	66	63	60	57	52	50	48	42	40	39			34
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	34			29
4	75	64	57	51	68	60	53	48	50	45	41	42	38	35	34	31	29			26
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26			23
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23			20
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21			18
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19			16
9	51	39	32	27	47	36	30	25	31	26	22	27	23	20	22	19	17			15
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	18	15			13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5356	5356	5356
5°	5361	5268	5303
10°	5305	5161	5129
15°	5228	4987	4861
20°	5128	4748	4532
25°	5026	4482	4214
30°	4890	4209	3812
35°	4756	3915	3459
40°	4619	3612	3055
45°	4461	3276	2688
50°	4297	2938	2330
55°	4126	2577	1987
60°	3927	2199	1634
65°	3698	1816	1468
70°	3421	1459	1326
75°	3072	1278	1202
80°	2567	1061	1037
85°	1741	691	769

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4461 cd/sqm

TEST NUMBER: P903935

CATALOG NUMBER: DFN2DIP-SQ3F0-120D120US830-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	438.1	2.1
10°-20°	1202.7	5.8
20°-30°	1688.5	8.1
30°-40°	1840.6	8.8
40°-50°	1691.7	8.1
50°-60°	1328.6	6.4
60°-70°	864.8	4.2
70°-80°	445.2	2.1
80°-90°	120.3	0.6
90°-100°	125.9	0.6
100°-110°	469.2	2.3
110°-120°	1244.4	6.0
120°-130°	2064.0	9.9
130°-140°	2192.4	10.5
140°-150°	2037.6	9.8
150°-160°	1638.2	7.9
160°-170°	1055.6	5.1
170°-180°	363.3	1.7
0°-30°	3329.4	16.0
0°-40°	5170.0	24.8
0°-60°	8190.3	39.4
0°-90°	9620.6	46.2
90°-120°	1839.5	8.8
90°-150°	8133.6	39.1
90°-180°	11191.0	53.8
0°-180°	20811.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4675	4675	4675	4675	4675	
5°	4675	4654	4598	4636	4624	443
15°	4446	4400	4256	4176	4133	1253
25°	4036	3900	3621	3448	3384	1856
35°	3478	3262	2890	2623	2530	2177
45°	2843	2559	2115	1815	1713	2195
55°	2162	1832	1375	1121	1041	1932
65°	1460	1117	736	592	580	1447
75°	778	482	338	309	305	823
85°	182	93	80	80	80	209
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: P903935

CATALOG NUMBER: DFN2DIP-SQ3F0-120D120US830-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4674.6	4674.6	4674.6	4674.6	4674.6
2.5°	4695.7	4674.6	4628.0	4670.6	4662.0
5°	4674.6	4653.5	4598.3	4636.5	4623.9
7.5°	4636.5	4611.3	4552.1	4568.7	4547.6
10°	4585.8	4556.2	4471.7	4458.7	4433.6
12.5°	4522.4	4484.3	4369.8	4344.7	4298.1
15°	4446.2	4399.5	4255.9	4175.5	4133.3
17.5°	4357.3	4289.5	4111.7	4018.9	3951.1
20°	4255.9	4171.0	3959.6	3854.1	3760.7
22.5°	4145.9	4048.5	3803.0	3659.3	3596.1
25°	4036.0	3900.3	3621.2	3447.9	3384.2
27.5°	3904.9	3760.7	3452.0	3253.2	3155.7
30°	3765.3	3604.2	3265.7	3050.3	2935.8
32.5°	3629.7	3434.9	3088.4	2834.4	2728.5
35°	3477.6	3261.7	2889.6	2623.0	2529.6
37.5°	3329.4	3096.5	2703.3	2411.1	2305.6
40°	3172.8	2919.2	2508.6	2208.3	2098.3
42.5°	3012.1	2741.5	2314.2	2000.9	1895.5
45°	2842.9	2559.3	2115.3	1814.7	1713.2
47.5°	2682.2	2382.0	1925.0	1624.4	1531.4
50°	2504.5	2204.2	1738.8	1446.6	1358.2
52.5°	2330.8	2013.5	1561.0	1281.9	1201.6
55°	2161.6	1831.7	1374.8	1121.2	1040.8
57.5°	1988.3	1649.9	1210.0	973.1	905.3
60°	1810.6	1472.2	1036.3	821.0	753.2
62.5°	1637.4	1298.9	888.3	685.4	651.7
65°	1459.6	1116.7	736.1	592.5	579.5
67.5°	1290.4	947.4	592.5	520.2	507.7
70°	1112.7	782.8	490.6	448.4	431.3
72.5°	943.5	630.2	410.2	376.5	368.1
75°	778.3	482.0	338.5	308.8	304.7
77.5°	613.6	342.4	266.6	249.6	241.0
80°	461.0	245.5	202.8	186.2	186.2
82.5°	321.4	165.1	139.6	131.0	131.0
85°	181.8	92.9	80.3	80.3	80.3
87.5°	67.8	33.6	33.6	29.6	29.6
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: P903935

CATALOG NUMBER: DFN2DIP-SQ3F0-120D120US830-RLLONL

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: P903935

CATALOG NUMBER: DFN2DIP-SQ3F0-120D120US830-RLONL

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	12.58	13.38	13.58	14.38	15.71	8.54	9.34	9.54	10.34	11.67
	3H	14.25	14.97	15.26	15.98	17.33	9.72	10.44	10.73	11.45	12.80
	4H	14.86	15.53	15.87	16.55	17.90	10.17	10.84	11.18	11.86	13.21
	6H	15.27	15.89	16.30	16.91	18.28	10.48	11.10	11.51	12.12	13.49
	8H	15.40	15.99	16.43	17.02	18.39	10.57	11.16	11.60	12.19	13.56
	12H	15.45	16.02	16.49	17.05	18.43	10.61	11.17	11.64	12.20	13.58
4H	2H	12.59	13.27	13.62	14.28	15.64	9.13	9.81	10.16	10.82	12.18
	3H	14.41	14.98	15.45	16.02	17.39	10.47	11.03	11.50	12.08	13.45
	4H	15.10	15.62	16.14	16.65	18.04	11.01	11.53	12.05	12.56	13.95
	6H	15.61	16.05	16.66	17.11	18.50	11.42	11.86	12.47	12.92	14.31
	8H	15.78	16.20	16.83	17.25	18.65	11.55	11.96	12.60	13.01	14.41
	12H	15.87	16.25	16.94	17.31	18.72	11.61	11.98	12.68	13.04	14.45
8H	4H	15.07	15.48	16.12	16.53	17.93	11.29	11.70	12.34	12.75	14.15
	6H	15.63	15.97	16.70	17.06	18.46	11.80	12.14	12.87	13.23	14.63
	8H	15.84	16.14	16.92	17.21	18.63	11.98	12.28	13.06	13.36	14.78
	12H	15.97	16.24	17.06	17.31	18.77	12.09	12.36	13.18	13.43	14.89
12H	4H	15.02	15.39	16.08	16.45	17.86	11.29	11.66	12.36	12.73	14.14
	6H	15.60	15.90	16.68	16.98	18.40	11.84	12.14	12.93	13.22	14.64
	8H	15.82	16.08	16.90	17.15	18.61	12.05	12.31	13.13	13.38	14.84