

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: P920230

Luminaire Tested: DFN2DIP-SQ3F0-100D120US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920230
REPORT IS A COMBINATION OF REPORTS P900018 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-100D120US935-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

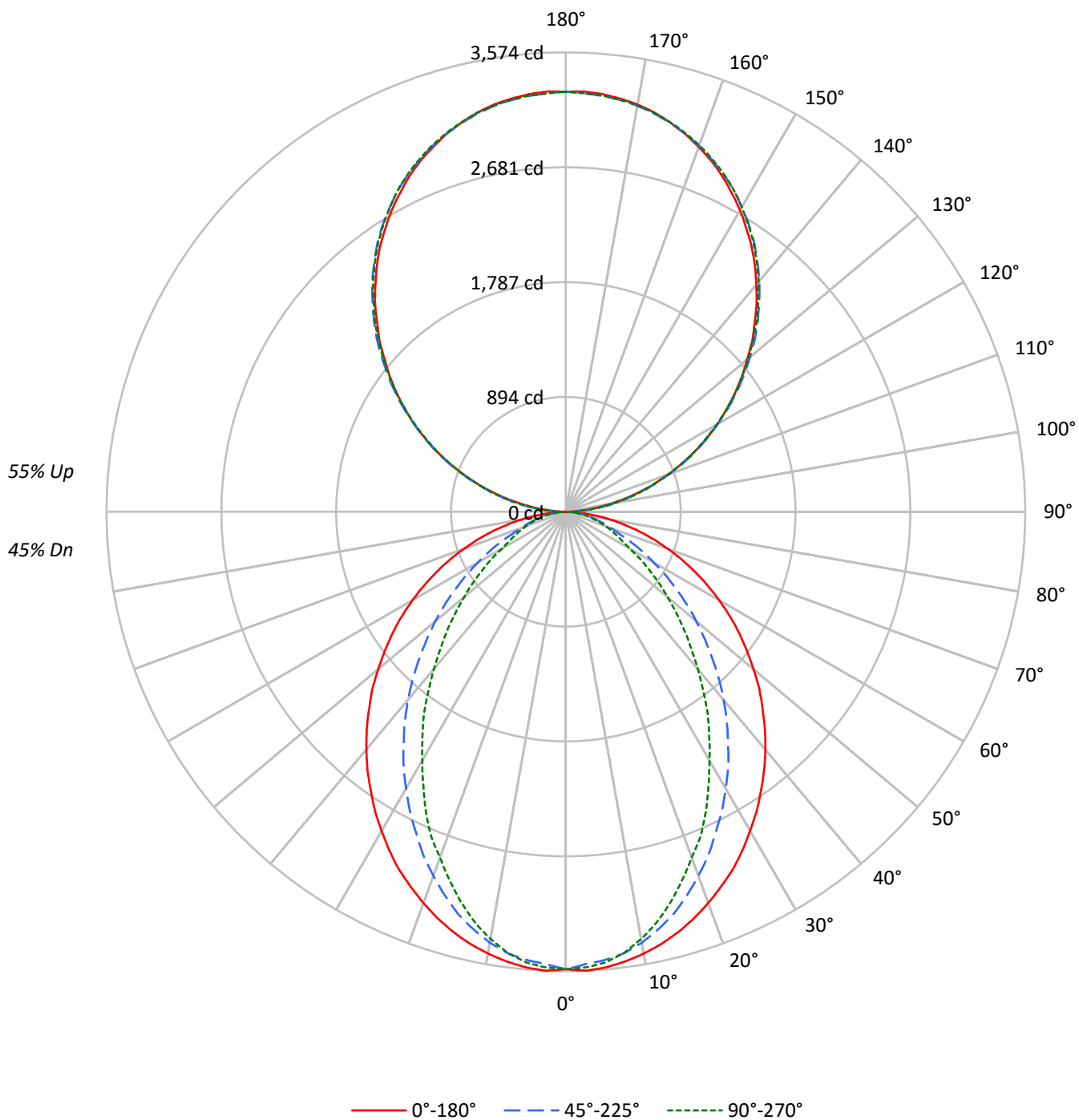
Lumens per Lamp: N/A
Luminaire Lumens: 16462.3 lumens
Efficiency: N/A
Efficacy: 85.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 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

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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	50	30	10
RCR																				
0	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51			45
1	97	93	89	86	89	85	82	79	71	69	67	58	56	55	46	45	44			38
2	89	82	76	71	81	75	70	66	63	59	56	51	49	47	41	39	38			33
3	81	72	65	59	74	66	60	55	56	51	47	46	43	40	37	34	33			28
4	74	64	56	51	68	59	52	47	50	45	41	41	37	35	33	30	28			25
5	68	57	49	44	63	53	46	41	45	39	35	37	33	30	30	27	25			22
6	63	51	44	38	58	48	41	36	40	35	31	34	30	27	27	24	22			19
7	58	47	39	33	54	43	36	31	37	31	28	31	27	24	25	22	20			17
8	54	42	35	30	50	39	33	28	34	28	25	28	24	21	23	20	18			16
9	51	39	31	27	46	36	29	25	31	26	22	26	22	19	21	18	16			14
10	47	36	29	24	43	33	27	23	28	23	20	24	20	17	20	17	15			13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4077	4077	4077
5°	4081	4010	4037
10°	4038	3929	3904
15°	3980	3796	3700
20°	3904	3615	3450
25°	3826	3412	3208
30°	3722	3204	2902
35°	3620	2981	2633
40°	3516	2750	2325
45°	3396	2494	2047
50°	3271	2236	1774
55°	3141	1961	1512
60°	2990	1674	1244
65°	2815	1382	1118
70°	2604	1110	1010
75°	2338	973	916
80°	1954	808	790
85°	1325	526	585

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3396 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	333.5	2.0
10°-20°	915.5	5.6
20°-30°	1285.4	7.8
30°-40°	1401.2	8.5
40°-50°	1287.8	7.8
50°-60°	1011.4	6.1
60°-70°	658.3	4.0
70°-80°	338.9	2.1
80°-90°	95.8	0.6
90°-100°	202.2	1.2
100°-110°	642.4	3.9
110°-120°	1099.4	6.7
120°-130°	1445.9	8.8
130°-140°	1623.0	9.9
140°-150°	1591.6	9.7
150°-160°	1335.1	8.1
160°-170°	885.4	5.4
170°-180°	309.5	1.9
0°-30°	2534.4	15.4
0°-40°	3935.6	23.9
0°-60°	6234.8	37.9
0°-90°	7327.8	44.5
90°-120°	1944.1	11.8
90°-150°	6604.6	40.1
90°-180°	9134.0	55.5
0°-180°	16462.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3558	3558	3558	3558	3558	
5°	3558	3542	3500	3530	3520	337
15°	3385	3349	3240	3178	3146	954
25°	3072	2969	2757	2625	2576	1413
35°	2647	2483	2200	1997	1926	1657
45°	2164	1948	1610	1381	1304	1671
55°	1646	1394	1046	854	792	1470
65°	1111	850	560	451	441	1102
75°	592	367	258	235	232	627
85°	138	71	61	61	61	159
90°	3	36	96	91	94	16
95°	144	171	176	176	171	160
105°	593	601	607	612	612	626
115°	1103	1119	1114	1111	1103	1091
125°	1605	1629	1622	1613	1610	1434
135°	2076	2106	2112	2109	2101	1604
145°	2520	2540	2555	2558	2548	1574
155°	2881	2889	2898	2912	2903	1326
165°	3135	3132	3132	3151	3138	884
175°	3262	3254	3248	3268	3251	310
180°	3268	3268	3268	3268	3268	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3558.5	3558.5	3558.5	3558.5	3558.5
2.5°	3574.5	3558.5	3522.9	3555.4	3548.9
5°	3558.5	3542.4	3500.4	3529.5	3519.8
7.5°	3529.5	3510.3	3465.2	3477.8	3461.8
10°	3490.8	3468.3	3404.0	3394.1	3375.0
12.5°	3442.7	3413.6	3326.5	3307.4	3271.8
15°	3384.6	3349.0	3239.7	3178.5	3146.4
17.5°	3316.9	3265.3	3130.1	3059.3	3007.7
20°	3239.7	3175.1	3014.2	2933.9	2862.8
22.5°	3156.0	3081.9	2894.9	2785.7	2737.5
25°	3072.3	2969.2	2756.6	2624.7	2576.2
27.5°	2972.5	2862.8	2627.8	2476.4	2402.3
30°	2866.3	2743.6	2486.0	2322.0	2234.9
32.5°	2763.1	2614.8	2351.0	2157.7	2077.0
35°	2647.2	2482.9	2199.7	1996.7	1925.6
37.5°	2534.5	2357.2	2057.9	1835.5	1755.1
40°	2415.3	2222.2	1909.6	1681.0	1597.3
42.5°	2292.9	2086.9	1761.7	1523.2	1442.9
45°	2164.1	1948.2	1610.3	1381.4	1304.2
47.5°	2041.9	1813.3	1465.4	1236.5	1165.8
50°	1906.5	1677.9	1323.6	1101.2	1033.9
52.5°	1774.3	1532.7	1188.3	975.8	914.6
55°	1645.5	1394.4	1046.5	853.5	792.3
57.5°	1513.6	1255.9	921.2	740.7	689.1
60°	1378.3	1120.7	788.9	624.9	573.3
62.5°	1246.4	988.8	676.1	521.8	496.1
65°	1111.1	850.1	560.3	451.0	441.1
67.5°	982.3	721.3	451.0	396.0	386.4
70°	847.0	595.9	373.4	341.3	328.4
72.5°	718.2	479.7	312.3	286.6	280.2
75°	592.5	367.0	257.6	235.1	232.0
77.5°	467.1	260.7	202.9	189.9	183.5
80°	350.9	186.9	154.5	141.8	141.8
82.5°	244.6	125.7	106.2	99.8	99.8
85°	138.4	70.7	61.1	61.1	61.1
87.5°	51.6	25.7	25.7	22.6	22.6
90°	2.9	35.5	96.5	90.7	93.6
92.5°	61.0	82.7	85.7	88.7	88.7
95°	143.8	171.4	176.3	176.3	171.4
97.5°	239.4	265.0	275.9	275.9	275.9
100°	349.7	372.4	380.2	380.2	377.3
102.5°	466.0	482.7	493.5	496.5	493.5
105°	593.1	600.9	606.8	611.7	611.7
107.5°	719.1	731.0	731.0	732.9	719.1
110°	841.3	857.0	857.0	857.0	849.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	973.3	990.1	987.0	979.2	973.3
115°	1103.3	1119.1	1114.1	1111.2	1103.3
117.5°	1232.3	1254.0	1240.3	1232.3	1224.5
120°	1362.4	1384.1	1362.4	1362.4	1353.6
122.5°	1480.7	1508.2	1494.4	1486.5	1480.7
125°	1604.7	1629.4	1621.5	1612.6	1609.6
127.5°	1726.0	1756.4	1745.6	1733.8	1726.0
130°	1839.2	1874.7	1869.7	1863.8	1853.0
132.5°	1966.3	1993.9	1995.8	1982.0	1974.2
135°	2075.6	2106.2	2112.1	2109.1	2101.3
137.5°	2197.8	2222.4	2227.3	2225.3	2213.5
140°	2305.1	2329.8	2343.6	2343.6	2332.7
142.5°	2415.5	2440.2	2448.0	2450.9	2440.2
145°	2519.9	2539.6	2555.4	2558.4	2547.5
147.5°	2613.5	2638.1	2650.0	2654.9	2644.0
150°	2710.1	2726.8	2737.6	2746.5	2737.6
152.5°	2795.7	2812.4	2826.3	2837.2	2826.3
155°	2881.4	2889.3	2898.2	2912.0	2903.1
157.5°	2955.4	2961.2	2966.1	2985.9	2972.1
160°	3021.3	3027.3	3030.2	3047.0	3035.1
162.5°	3082.4	3082.4	3085.4	3104.1	3090.3
165°	3134.6	3131.7	3131.7	3151.3	3137.6
167.5°	3181.9	3173.0	3173.0	3192.8	3179.0
170°	3217.4	3209.5	3206.5	3226.2	3209.5
172.5°	3242.0	3234.1	3231.2	3250.9	3234.1
175°	3261.7	3253.8	3247.9	3267.6	3250.9
177.5°	3272.6	3264.6	3258.7	3275.5	3258.7
180°	3267.6	3267.6	3267.6	3267.6	3267.6

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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	11.46	12.25	12.47	13.26	14.61	7.42	8.21	8.43	9.22	10.57
	3H	13.13	13.83	14.15	14.86	16.23	8.60	9.30	9.62	10.33	11.70
	4H	13.73	14.40	14.76	15.43	16.80	9.04	9.71	10.07	10.74	12.11
	6H	14.15	14.76	15.19	15.79	17.18	9.36	9.97	10.40	11.00	12.39
	8H	14.27	14.85	15.32	15.90	17.29	9.44	10.02	10.49	11.07	12.46
	12H	14.33	14.88	15.38	15.92	17.33	9.48	10.03	10.53	11.08	12.48
4H	2H	11.47	12.14	12.51	13.16	14.54	8.01	8.67	9.05	9.70	11.08
	3H	13.29	13.84	14.34	14.90	16.29	9.35	9.90	10.39	10.95	12.35
	4H	13.98	14.48	15.03	15.53	16.94	9.89	10.39	10.94	11.44	12.85
	6H	14.49	14.92	15.55	15.99	17.40	10.30	10.73	11.36	11.80	13.21
	8H	14.66	15.06	15.72	16.13	17.55	10.42	10.83	11.48	11.89	13.31
	12H	14.75	15.11	15.83	16.19	17.62	10.48	10.85	11.56	11.92	13.35
8H	4H	13.94	14.35	15.00	15.41	16.83	10.16	10.57	11.22	11.63	13.05
	6H	14.50	14.83	15.58	15.94	17.36	10.67	11.00	11.76	12.11	13.53
	8H	14.71	15.01	15.80	16.09	17.53	10.86	11.15	11.95	12.24	13.68
	12H	14.85	15.10	15.94	16.19	17.67	10.97	11.23	12.06	12.31	13.79
12H	4H	13.89	14.26	14.97	15.33	16.76	10.16	10.53	11.24	11.61	13.04
	6H	14.47	14.77	15.57	15.86	17.30	10.72	11.01	11.81	12.10	13.54
	8H	14.69	14.95	15.78	16.03	17.51	10.92	11.18	12.02	12.26	13.74

END OF REPORT