

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: P915056

Luminaire Tested: DFN2DIP-SQ4F0-110D140US927-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915056
REPORT IS A COMBINATION OF REPORTS P900195 AND P896915
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-110D140US927-FLLFLL
Description: 4 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

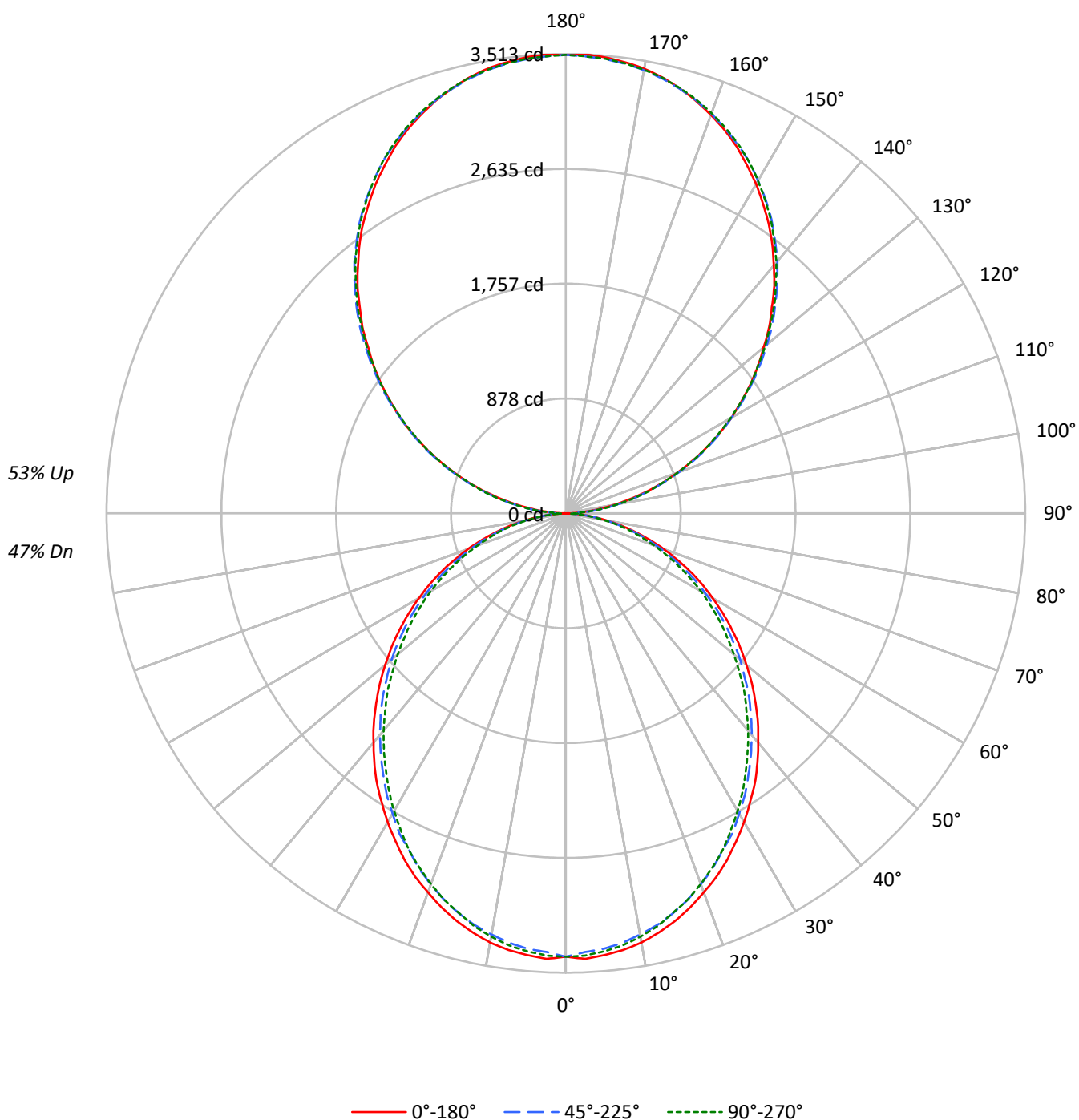
Lumens per Lamp: N/A
Luminaire Lumens: 18442.0 lumens
Efficiency: N/A
Efficacy: 87.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 210.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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	106	106	106	106	98	98	98	98	82	82	82	67	67	67	53	53	53
1	97	93	89	85	89	85	82	79	71	69	67	59	57	56	47	46	45
2	88	81	75	70	81	75	69	65	63	59	55	52	49	46	41	40	38
3	81	71	64	58	74	66	59	54	55	51	47	46	42	39	37	34	32
4	74	63	55	49	67	58	51	46	49	44	40	41	37	34	33	30	28
5	68	56	48	42	62	52	45	39	44	38	34	36	32	29	30	27	24
6	62	50	42	36	57	47	39	34	40	34	30	33	29	26	27	24	21
7	58	45	37	32	53	42	35	30	36	30	26	30	26	23	24	21	19
8	53	41	33	28	49	38	31	27	33	27	23	27	23	20	22	19	17
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	21	18	15
10	46	34	27	23	43	32	26	21	28	22	19	23	19	16	19	16	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2379	2379	2379
5°	2383	2346	2362
10°	2364	2315	2331
15°	2329	2278	2282
20°	2282	2225	2231
25°	2235	2162	2173
30°	2176	2104	2098
35°	2121	2035	2019
40°	2053	1965	1944
45°	1985	1895	1868
50°	1910	1822	1779
55°	1832	1737	1697
60°	1744	1637	1604
65°	1648	1533	1494
70°	1525	1405	1375
75°	1355	1254	1267
80°	1151	1061	1059
85°	833	725	712

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2759 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	319.1	1.7
10°-20°	897.9	4.9
20°-30°	1319.6	7.2
30°-40°	1532.6	8.3
40°-50°	1530.7	8.3
50°-60°	1334.7	7.2
60°-70°	986.7	5.4
70°-80°	558.2	3.0
80°-90°	157.3	0.9
90°-100°	217.0	1.2
100°-110°	689.6	3.7
110°-120°	1180.2	6.4
120°-130°	1552.1	8.4
130°-140°	1742.2	9.4
140°-150°	1708.4	9.3
150°-160°	1433.1	7.8
160°-170°	950.4	5.2
170°-180°	332.2	1.8
0°-30°	2536.6	13.8
0°-40°	4069.2	22.1
0°-60°	6934.6	37.6
0°-90°	8636.8	46.8
90°-120°	2086.8	11.3
90°-150°	7089.5	38.4
90°-180°	9805.0	53.2
0°-180°	18442.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3391	3391	3391	3391	3391	
5°	3391	3378	3342	3368	3362	322
15°	3228	3208	3166	3179	3163	909
25°	2921	2895	2840	2846	2840	1344
35°	2520	2488	2436	2416	2400	1574
45°	2051	2028	1979	1943	1930	1583
55°	1552	1532	1493	1454	1438	1388
65°	1047	1027	994	965	949	1035
75°	548	541	525	505	512	585
85°	134	130	127	117	114	149
90°	3	38	104	97	100	18
95°	154	184	189	189	184	172
105°	637	645	651	657	657	672
115°	1184	1201	1196	1193	1184	1171
125°	1723	1749	1740	1731	1728	1539
135°	2228	2261	2267	2264	2256	1722
145°	2705	2726	2743	2746	2734	1690
155°	3093	3102	3111	3126	3116	1424
165°	3365	3362	3362	3383	3368	949
175°	3501	3493	3486	3508	3490	333
180°	3508	3508	3508	3508	3508	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3390.7	3390.7	3390.7	3390.7	3390.7
2.5°	3410.3	3394.1	3358.1	3390.7	3384.4
5°	3390.7	3377.9	3341.9	3367.8	3361.6
7.5°	3367.8	3348.5	3312.5	3338.8	3332.2
10°	3332.2	3309.3	3270.3	3296.2	3286.5
12.5°	3283.1	3263.7	3224.7	3240.9	3234.3
15°	3227.7	3208.3	3165.8	3178.9	3162.7
17.5°	3159.2	3139.9	3097.3	3113.6	3097.3
20°	3084.2	3064.8	3019.2	3028.8	3016.1
22.5°	3009.5	2980.0	2937.5	2937.5	2930.9
25°	2921.2	2895.3	2840.0	2846.2	2840.0
27.5°	2823.3	2800.5	2758.3	2748.6	2732.4
30°	2725.8	2699.5	2650.7	2641.1	2627.9
32.5°	2621.3	2602.0	2549.7	2530.0	2516.8
35°	2520.3	2487.8	2435.6	2415.8	2399.6
37.5°	2406.2	2376.8	2324.6	2301.7	2285.4
40°	2288.9	2262.6	2210.4	2181.4	2168.2
42.5°	2174.8	2148.5	2096.6	2063.7	2044.4
45°	2051.0	2028.1	1978.9	1943.4	1930.2
47.5°	1930.2	1907.4	1855.1	1819.2	1799.8
50°	1802.9	1786.7	1741.0	1695.3	1679.1
52.5°	1679.1	1656.2	1614.1	1578.0	1555.2
55°	1552.1	1532.4	1493.3	1454.2	1438.0
57.5°	1424.8	1408.6	1366.0	1326.9	1313.8
60°	1297.5	1284.8	1239.1	1203.1	1193.4
62.5°	1173.7	1150.9	1118.3	1085.8	1072.7
65°	1046.7	1027.0	994.5	965.1	948.9
67.5°	916.3	899.8	870.7	847.9	834.7
70°	795.6	782.4	753.0	730.2	717.4
72.5°	671.8	658.6	642.4	619.6	609.8
75°	547.6	541.4	524.7	505.4	512.0
77.5°	436.9	423.7	417.2	407.5	397.8
80°	326.2	322.7	316.2	306.5	299.9
82.5°	221.7	221.7	218.6	205.5	205.5
85°	133.6	130.4	127.3	117.2	114.2
87.5°	58.8	52.2	45.6	36.0	32.5
90°	3.2	38.1	103.6	97.3	100.4
92.5°	65.6	88.8	92.0	95.1	95.1
95°	154.4	184.0	189.3	189.3	184.0
97.5°	257.0	284.5	296.1	296.1	296.1
100°	375.4	399.7	408.1	408.1	405.0
102.5°	500.2	518.2	529.8	533.0	529.8
105°	636.6	645.1	651.4	656.6	656.6
107.5°	771.9	784.7	784.7	786.7	771.9
110°	903.1	920.0	920.0	920.0	911.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1044.7	1062.7	1059.5	1051.1	1044.7
115°	1184.3	1201.3	1196.0	1192.8	1184.3
117.5°	1322.9	1346.2	1331.3	1322.9	1314.4
120°	1462.4	1485.7	1462.4	1462.4	1452.9
122.5°	1589.4	1618.9	1604.2	1595.7	1589.4
125°	1722.6	1749.0	1740.5	1731.0	1727.8
127.5°	1852.6	1885.4	1873.7	1861.1	1852.6
130°	1974.2	2012.3	2007.0	2000.7	1989.0
132.5°	2110.6	2140.2	2142.4	2127.6	2119.1
135°	2228.0	2260.8	2267.1	2264.0	2255.5
137.5°	2359.1	2385.6	2390.9	2388.7	2376.1
140°	2474.4	2500.8	2515.7	2515.7	2504.0
142.5°	2592.8	2619.3	2627.7	2630.9	2619.3
145°	2704.9	2726.1	2743.0	2746.2	2734.5
147.5°	2805.4	2831.8	2844.5	2849.8	2838.1
150°	2909.0	2927.0	2938.6	2948.1	2938.6
152.5°	3001.0	3019.0	3033.8	3045.4	3033.8
155°	3093.0	3101.5	3111.0	3125.8	3116.3
157.5°	3172.3	3178.6	3183.9	3205.1	3190.3
160°	3243.2	3249.5	3252.7	3270.7	3257.9
162.5°	3308.7	3308.7	3311.9	3332.0	3317.2
165°	3364.8	3361.6	3361.6	3382.8	3368.0
167.5°	3415.5	3406.0	3406.0	3427.1	3412.3
170°	3453.6	3445.1	3441.9	3463.1	3445.1
172.5°	3480.1	3471.6	3468.4	3489.6	3471.6
175°	3501.2	3492.7	3486.4	3507.5	3489.6
177.5°	3512.8	3504.4	3498.0	3515.9	3498.0
180°	3507.5	3507.5	3507.5	3507.5	3507.5

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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	9.99	10.83	10.98	11.82	13.14	9.55	10.38	10.53	11.38	12.70
	3H	11.66	12.40	12.65	13.41	14.75	11.17	11.91	12.16	12.92	14.26
	4H	12.25	12.95	13.25	13.96	15.31	11.75	12.46	12.76	13.47	14.81
	6H	12.65	13.30	13.67	14.31	15.67	12.15	12.80	13.17	13.81	15.17
	8H	12.75	13.37	13.78	14.40	15.76	12.25	12.87	13.28	13.90	15.26
	12H	12.80	13.39	13.83	14.42	15.80	12.29	12.88	13.32	13.91	15.29
4H	2H	10.45	11.16	11.47	12.17	13.51	10.10	10.81	11.11	11.81	13.16
	3H	12.32	12.91	13.34	13.95	15.31	11.91	12.50	12.93	13.54	14.90
	4H	13.04	13.58	14.07	14.61	15.99	12.61	13.15	13.64	14.18	15.56
	6H	13.55	14.02	14.59	15.07	16.45	13.12	13.59	14.16	14.64	16.02
	8H	13.71	14.14	14.75	15.19	16.58	13.27	13.70	14.31	14.75	16.14
	12H	13.78	14.17	14.84	15.23	16.63	13.33	13.72	14.39	14.78	16.18
8H	4H	13.23	13.67	14.27	14.71	16.10	12.85	13.29	13.90	14.34	15.73
	6H	13.87	14.23	14.93	15.31	16.70	13.48	13.84	14.55	14.93	16.32
	8H	14.09	14.41	15.16	15.48	16.89	13.70	14.01	14.77	15.08	16.49
	12H	14.22	14.50	15.30	15.57	17.02	13.81	14.09	14.89	15.16	16.61
12H	4H	13.22	13.61	14.28	14.67	16.07	12.85	13.24	13.91	14.30	15.70
	6H	13.90	14.21	14.97	15.28	16.69	13.52	13.84	14.60	14.91	16.32
	8H	14.14	14.42	15.22	15.49	16.94	13.76	14.04	14.84	15.11	16.56

END OF REPORT