

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: P903375

Luminaire Tested: DFN2DIP-PN4F0-100D070US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903375
REPORT IS A COMBINATION OF REPORTS P901196 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-100D070US830-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

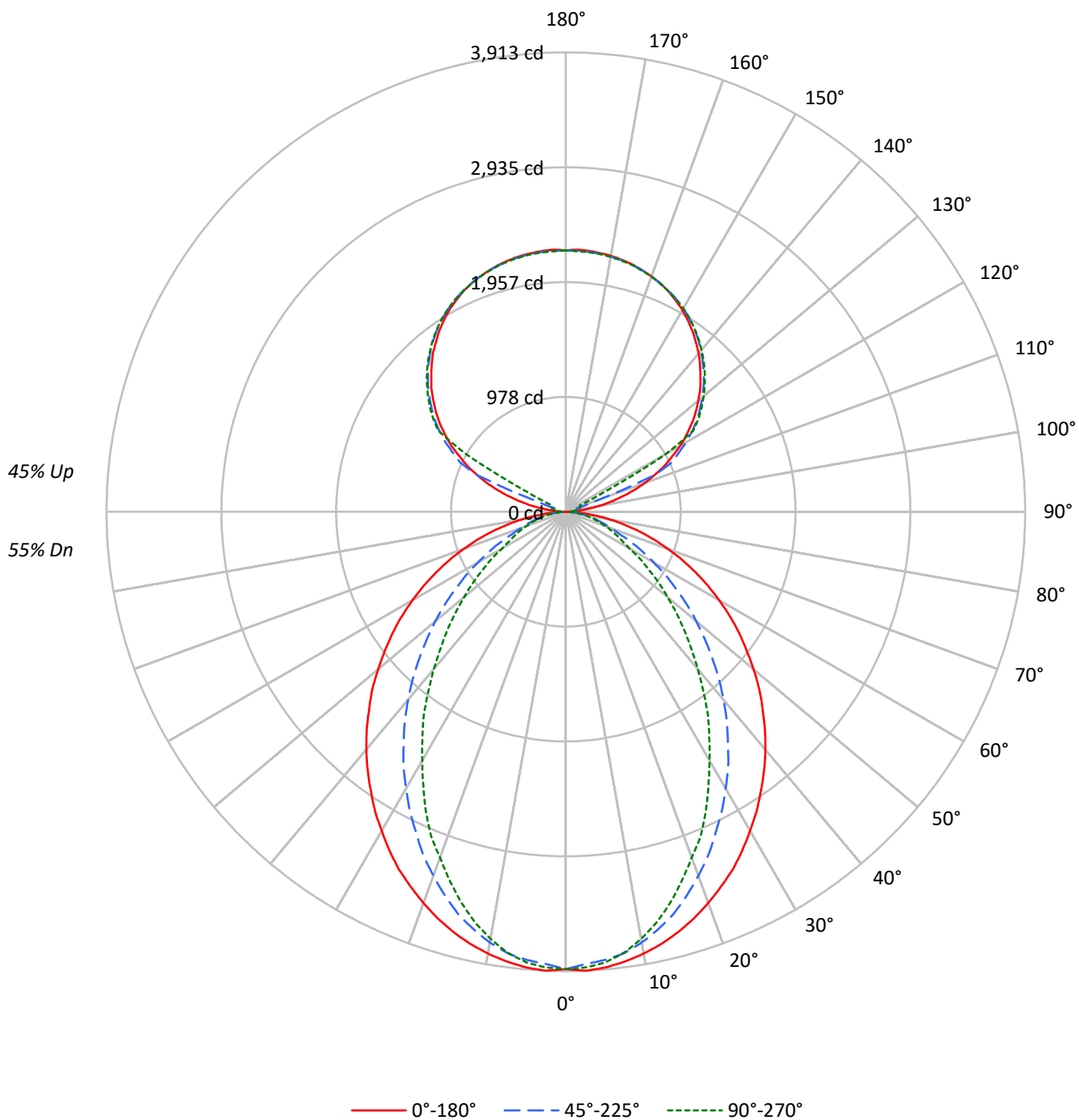
Lumens per Lamp: N/A
Luminaire Lumens: 14543.4 lumens
Efficiency: N/A
Efficacy: 94.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 153.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
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	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61
1	99	95	92	88	92	89	86	83	76	74	72	65	63	62	55	53	52
2	91	84	78	73	84	78	73	69	68	64	60	58	55	52	49	47	45
3	83	74	67	61	77	69	63	58	60	55	51	52	48	45	44	41	39
4	77	66	58	52	71	62	55	50	54	48	44	46	42	39	39	36	34
5	70	59	51	45	65	55	48	43	48	43	39	42	38	34	36	33	30
6	65	53	45	40	60	50	43	38	44	38	34	38	34	30	33	29	27
7	60	48	41	35	56	45	38	33	40	34	30	35	30	27	30	27	24
8	56	44	36	31	52	41	35	30	37	31	27	32	28	24	28	24	22
9	52	40	33	28	49	38	31	27	34	28	24	29	25	22	26	22	20
10	49	37	30	25	46	35	29	24	31	26	22	27	23	20	24	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2844	2844	2844
5°	2848	2799	2817
10°	2820	2744	2726
15°	2781	2654	2584
20°	2730	2529	2411
25°	2677	2389	2244
30°	2606	2246	2031
35°	2537	2092	1844
40°	2467	1932	1630
45°	2385	1755	1436
50°	2301	1576	1246
55°	2212	1385	1063
60°	2110	1185	876
65°	1992	982	789
70°	1850	792	715
75°	1671	699	651
80°	1411	588	567
85°	983	394	429

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2385 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	365.1	2.5
10°-20°	1002.2	6.9
20°-30°	1407.1	9.7
30°-40°	1533.9	10.5
40°-50°	1409.8	9.7
50°-60°	1107.2	7.6
60°-70°	720.7	5.0
70°-80°	371.0	2.6
80°-90°	98.6	0.7
90°-100°	73.4	0.5
100°-110°	273.7	1.9
110°-120°	725.9	5.0
120°-130°	1204.0	8.3
130°-140°	1278.9	8.8
140°-150°	1188.6	8.2
150°-160°	955.6	6.6
160°-170°	615.8	4.2
170°-180°	211.9	1.5
0°-30°	2774.5	19.1
0°-40°	4308.3	29.6
0°-60°	6825.3	46.9
0°-90°	8015.5	55.1
90°-120°	1073.0	7.4
90°-150°	4744.6	32.6
90°-180°	6528.0	44.9
0°-180°	14543.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3896	3896	3896	3896	3896	
5°	3896	3878	3832	3864	3853	369
15°	3705	3666	3546	3480	3444	1044
25°	3363	3250	3018	2873	2820	1547
35°	2898	2718	2408	2186	2108	1814
45°	2369	2133	1763	1512	1428	1830
55°	1801	1526	1146	934	867	1610
65°	1216	931	613	494	483	1206
75°	649	402	282	257	254	686
85°	152	77	67	67	67	174
90°	2	19	32	40	44	14
95°	105	52	63	71	69	124
105°	490	538	98	116	122	523
115°	926	954	994	248	132	912
125°	1310	1331	1362	1373	1378	1168
135°	1621	1647	1661	1677	1674	1252
145°	1880	1879	1906	1917	1909	1176
155°	2070	2056	2075	2085	2072	954
165°	2182	2172	2177	2188	2177	616
175°	2232	2220	2224	2235	2219	212
180°	2227	2227	2227	2227	2227	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3895.5	3895.5	3895.5	3895.5	3895.5
2.5°	3913.1	3895.5	3856.6	3892.1	3885.1
5°	3895.5	3877.9	3831.9	3863.8	3853.2
7.5°	3863.8	3842.7	3793.4	3807.2	3789.7
10°	3821.4	3796.7	3726.4	3715.6	3694.7
12.5°	3768.8	3736.9	3641.5	3620.6	3581.7
15°	3705.1	3666.2	3546.5	3479.6	3444.4
17.5°	3631.0	3574.6	3426.5	3349.0	3292.6
20°	3546.5	3475.8	3299.7	3211.8	3134.0
22.5°	3454.9	3373.7	3169.1	3049.5	2996.7
25°	3363.3	3250.4	3017.6	2873.2	2820.2
27.5°	3254.0	3134.0	2876.6	2710.9	2629.8
30°	3137.7	3003.4	2721.4	2541.9	2446.6
32.5°	3024.8	2862.4	2573.7	2362.0	2273.7
35°	2897.9	2718.1	2408.0	2185.8	2108.0
37.5°	2774.6	2580.4	2252.8	2009.3	1921.4
40°	2644.0	2432.7	2090.5	1840.2	1748.6
42.5°	2510.1	2284.5	1928.5	1667.5	1579.5
45°	2369.1	2132.7	1762.8	1512.2	1427.7
47.5°	2235.2	1985.0	1604.2	1353.6	1276.2
50°	2087.1	1836.8	1449.0	1205.5	1131.8
52.5°	1942.3	1677.9	1300.9	1068.2	1001.3
55°	1801.3	1526.4	1145.7	934.3	867.3
57.5°	1657.0	1374.9	1008.4	810.9	754.4
60°	1508.8	1226.8	863.7	684.1	627.6
62.5°	1364.4	1082.4	740.2	571.2	543.1
65°	1216.4	930.6	613.4	493.7	482.9
67.5°	1075.3	789.6	493.7	433.5	423.0
70°	927.2	652.3	408.8	373.6	359.5
72.5°	786.2	525.1	341.9	313.8	306.7
75°	648.6	401.7	282.0	257.3	253.9
77.5°	511.3	285.4	222.2	207.9	200.9
80°	384.1	204.6	169.1	155.2	155.2
82.5°	267.8	137.6	116.3	109.2	109.2
85°	151.5	77.4	66.9	66.9	66.9
87.5°	56.5	28.1	28.1	24.7	24.7
90°	1.5	19.3	32.1	40.3	43.5
92.5°	40.3	33.8	38.6	41.9	43.5
95°	104.6	51.5	62.8	71.0	69.3
97.5°	188.4	56.5	82.1	87.1	88.6
100°	285.3	64.5	91.8	104.6	107.9
102.5°	391.4	388.4	95.1	112.7	117.6
105°	489.8	538.2	98.3	115.9	122.4
107.5°	604.2	644.4	101.6	119.2	125.7
110°	713.9	747.5	282.0	120.9	127.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	817.0	845.8	818.5	123.9	128.9
115°	926.4	953.8	994.1	248.2	132.2
117.5°	1021.5	1053.7	1081.2	850.6	428.6
120°	1127.8	1152.0	1181.1	1200.4	982.9
122.5°	1218.0	1243.8	1276.2	1285.7	1287.4
125°	1309.9	1330.9	1361.5	1372.8	1377.5
127.5°	1393.6	1416.2	1440.5	1456.6	1458.1
130°	1472.6	1498.5	1516.1	1533.9	1532.4
132.5°	1553.2	1574.2	1591.9	1606.4	1604.9
135°	1620.9	1646.7	1661.1	1677.3	1674.1
137.5°	1691.7	1711.1	1727.3	1743.4	1738.6
140°	1761.0	1774.0	1791.6	1806.1	1798.1
142.5°	1819.1	1830.4	1851.2	1864.1	1856.1
145°	1880.4	1878.7	1906.0	1917.3	1909.3
147.5°	1933.3	1928.6	1956.0	1964.0	1957.7
150°	1985.0	1973.8	1999.6	2009.1	2001.1
152.5°	2028.4	2015.6	2039.8	2049.5	2038.2
155°	2070.4	2056.0	2075.3	2084.9	2072.1
157.5°	2104.2	2091.4	2105.9	2117.2	2104.2
160°	2133.4	2123.5	2133.4	2142.9	2131.6
162.5°	2159.0	2149.4	2157.4	2168.7	2154.2
165°	2181.5	2172.0	2176.7	2188.0	2176.7
167.5°	2199.3	2189.5	2194.5	2205.8	2191.3
170°	2213.8	2204.1	2207.3	2218.7	2204.1
172.5°	2223.5	2213.8	2217.1	2228.4	2213.8
175°	2231.5	2220.2	2223.5	2234.7	2218.7
177.5°	2234.7	2223.5	2225.2	2236.5	2221.9
180°	2226.7	2226.7	2226.7	2226.7	2226.7

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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	11.25	12.12	12.17	13.06	14.26	7.21	8.09	8.13	9.02	10.22
	3H	12.93	13.72	13.86	14.66	15.88	8.41	9.19	9.34	10.13	11.35
	4H	13.55	14.28	14.49	15.23	16.46	8.86	9.60	9.81	10.55	11.78
	6H	13.97	14.65	14.93	15.60	16.85	9.18	9.86	10.14	10.82	12.06
	8H	14.10	14.75	15.07	15.72	16.96	9.28	9.92	10.24	10.89	12.14
	12H	14.17	14.78	15.13	15.74	17.01	9.32	9.94	10.29	10.90	12.17
4H	2H	11.27	12.01	12.22	12.96	14.19	7.82	8.56	8.77	9.50	10.73
	3H	13.11	13.72	14.07	14.70	15.95	9.17	9.79	10.13	10.76	12.01
	4H	13.81	14.37	14.78	15.34	16.61	9.72	10.28	10.69	11.25	12.52
	6H	14.33	14.81	15.31	15.80	17.07	10.15	10.63	11.13	11.62	12.89
	8H	14.50	14.95	15.49	15.94	17.23	10.28	10.72	11.26	11.71	13.00
	12H	14.60	15.01	15.61	16.01	17.30	10.34	10.75	11.35	11.75	13.04
8H	4H	13.78	14.23	14.76	15.21	16.50	10.01	10.46	10.99	11.44	12.73
	6H	14.35	14.72	15.36	15.75	17.03	10.53	10.90	11.54	11.93	13.21
	8H	14.57	14.89	15.58	15.91	17.21	10.72	11.05	11.74	12.07	13.37
	12H	14.71	15.00	15.73	16.01	17.35	10.84	11.13	11.86	12.14	13.49
12H	4H	13.73	14.14	14.73	15.14	16.43	10.02	10.42	11.02	11.42	12.71
	6H	14.32	14.65	15.34	15.67	16.97	10.58	10.91	11.60	11.92	13.22
	8H	14.55	14.84	15.57	15.85	17.19	10.79	11.08	11.81	12.09	13.44