

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: P903378

Luminaire Tested: DFN2DIP-PN4F0-100D080US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903378
REPORT IS A COMBINATION OF REPORTS P899694 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-100D080US830-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

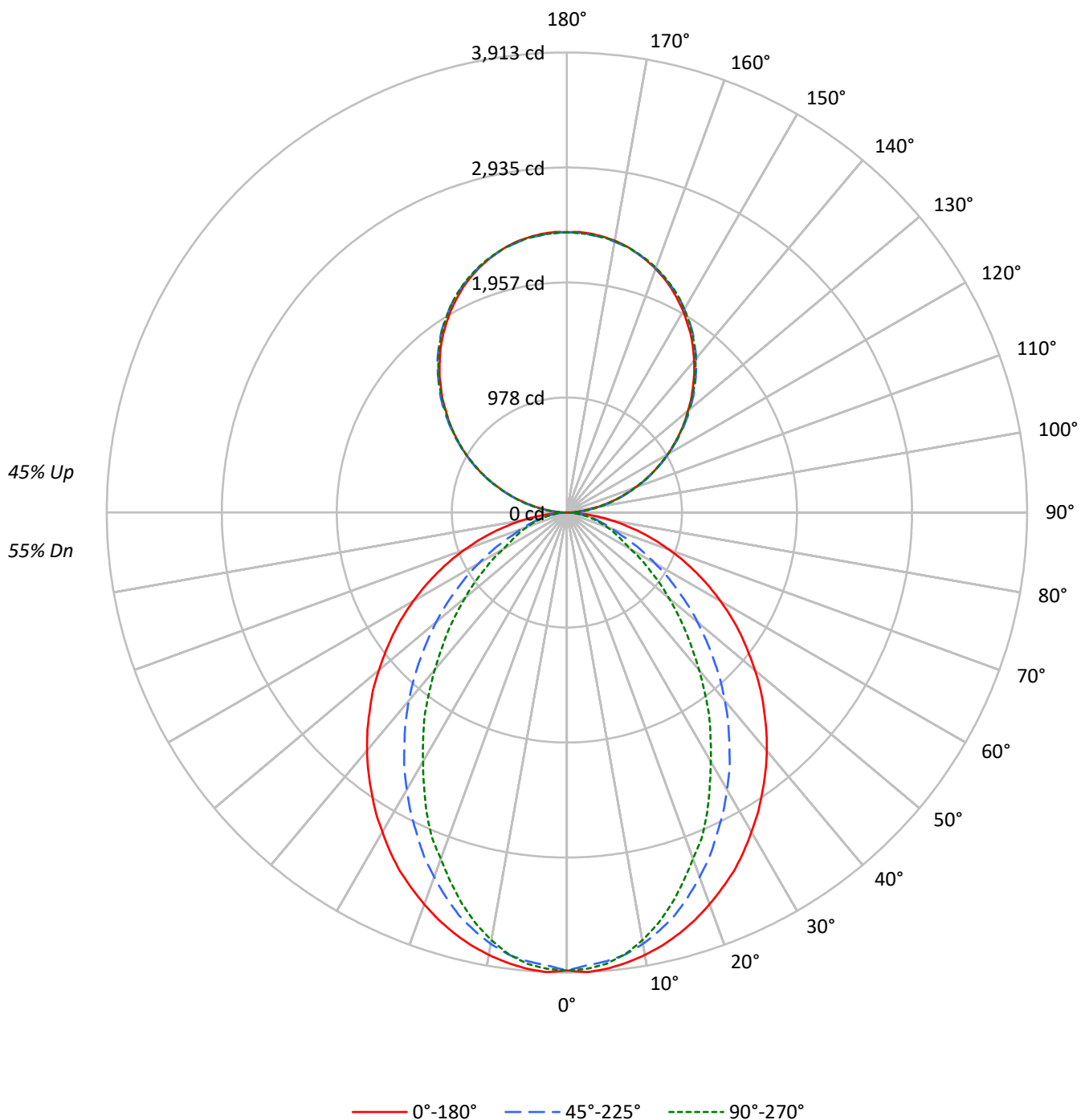
Lumens per Lamp: N/A
Luminaire Lumens: 14684.8 lumens
Efficiency: N/A
Efficacy: 92.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 158.9
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

TEST NUMBER: P903378

CATALOG NUMBER: DFN2DIP-PN4F0-100D080US830-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P903378

CATALOG NUMBER: DFN2DIP-PN4F0-100D080US830-RLLFLL

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	100	100	100	100	86	86	86	73	73	73	60	60	60
1	99	95	91	88	92	89	85	82	76	74	72	65	63	62	54	53	52
2	91	84	78	73	84	78	73	69	67	63	60	57	55	52	48	46	45
3	83	74	67	61	77	69	63	58	60	55	51	51	48	45	43	41	39
4	76	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	38	42	37	34	35	32	30
6	65	53	45	40	60	50	43	38	44	38	34	38	33	30	32	29	26
7	60	48	40	35	56	45	38	33	40	34	30	35	30	27	30	26	24
8	56	44	36	31	52	41	34	30	36	31	27	32	27	24	27	24	21
9	52	40	33	28	49	38	31	27	34	28	24	29	25	22	25	22	19
10	49	37	30	25	46	35	28	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

TEST NUMBER: P903378

CATALOG NUMBER: DFN2DIP-PN4F0-100D080US830-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	365.1	2.5
10°-20°	1002.2	6.8
20°-30°	1407.1	9.6
30°-40°	1533.9	10.4
40°-50°	1409.8	9.6
50°-60°	1107.2	7.5
60°-70°	720.7	4.9
70°-80°	371.0	2.5
80°-90°	101.5	0.7
90°-100°	147.6	1.0
100°-110°	468.9	3.2
110°-120°	802.4	5.5
120°-130°	1055.3	7.2
130°-140°	1184.5	8.1
140°-150°	1161.5	7.9
150°-160°	974.4	6.6
160°-170°	646.2	4.4
170°-180°	225.9	1.5
0°-30°	2774.5	18.9
0°-40°	4308.3	29.3
0°-60°	6825.3	46.5
0°-90°	8018.4	54.6
90°-120°	1418.8	9.7
90°-150°	4820.1	32.8
90°-180°	6666.0	45.4
0°-180°	14684.8	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	26	70	66	68	14
95°	105	125	129	129	125	117
105°	433	439	443	446	446	457
115°	805	817	813	811	805	796
125°	1171	1189	1183	1177	1175	1047
135°	1515	1537	1541	1539	1534	1171
145°	1839	1853	1865	1867	1859	1149
155°	2103	2109	2115	2125	2119	968
165°	2288	2286	2286	2300	2290	645
175°	2380	2375	2370	2385	2372	226
180°	2385	2385	2385	2385	2385	

TEST NUMBER: P903378

CATALOG NUMBER: DFN2DIP-PN4F0-100D080US830-RLFL

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°	2.2	25.9	70.5	66.2	68.3
92.5°	44.6	60.4	62.6	64.7	64.7
95°	105.0	125.1	128.7	128.7	125.1
97.5°	174.7	193.4	201.3	201.3	201.3
100°	255.2	271.7	277.5	277.5	275.3
102.5°	340.1	352.3	360.1	362.3	360.1
105°	432.8	438.6	442.9	446.5	446.5
107.5°	524.8	533.5	533.5	534.9	524.8
110°	614.0	625.5	625.5	625.5	619.7

TEST NUMBER: P903378

CATALOG NUMBER: DFN2DIP-PN4F0-100D080US830-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	710.3	722.6	720.4	714.6	710.3
115°	805.2	816.7	813.1	811.0	805.2
117.5°	899.4	915.2	905.1	899.4	893.6
120°	994.3	1010.1	994.3	994.3	987.8
122.5°	1080.5	1100.7	1090.6	1084.9	1080.5
125°	1171.1	1189.1	1183.4	1176.9	1174.8
127.5°	1259.6	1281.9	1273.9	1265.4	1259.6
130°	1342.3	1368.1	1364.5	1360.3	1352.4
132.5°	1435.0	1455.1	1456.6	1446.5	1440.8
135°	1514.8	1537.1	1541.4	1539.3	1533.5
137.5°	1603.9	1621.9	1625.5	1624.1	1615.4
140°	1682.3	1700.3	1710.3	1710.3	1702.4
142.5°	1762.8	1780.8	1786.6	1788.8	1780.8
145°	1839.1	1853.4	1864.9	1867.1	1859.2
147.5°	1907.3	1925.3	1933.9	1937.6	1929.7
150°	1977.8	1990.0	1997.9	2004.4	1997.9
152.5°	2040.3	2052.6	2062.7	2070.6	2062.7
155°	2102.9	2108.7	2115.2	2125.2	2118.7
157.5°	2156.8	2161.2	2164.7	2179.1	2169.1
160°	2205.0	2209.3	2211.5	2223.6	2215.1
162.5°	2249.6	2249.6	2251.7	2265.4	2255.3
165°	2287.6	2285.5	2285.5	2299.9	2289.8
167.5°	2322.1	2315.7	2315.7	2330.1	2320.0
170°	2348.1	2342.3	2340.1	2354.6	2342.3
172.5°	2366.1	2360.3	2358.1	2372.5	2360.3
175°	2380.4	2374.6	2370.3	2384.7	2372.5
177.5°	2388.3	2382.6	2378.2	2390.5	2378.2
180°	2384.7	2384.7	2384.7	2384.7	2384.7

TEST NUMBER: P903378

CATALOG NUMBER: DFN2DIP-PN4F0-100D080US830-RLFL

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	11.20	12.07	12.13	13.01	14.22	7.17	8.04	8.09	8.97	10.18
	3H	12.89	13.66	13.82	14.61	15.84	8.36	9.14	9.30	10.08	11.32
	4H	13.50	14.23	14.45	15.18	16.42	8.81	9.55	9.76	10.50	11.74
	6H	13.93	14.60	14.89	15.56	16.81	9.14	9.81	10.10	10.77	12.02
	8H	14.05	14.70	15.02	15.67	16.92	9.23	9.87	10.20	10.85	12.10
	12H	14.12	14.73	15.09	15.70	16.97	9.27	9.89	10.25	10.85	12.13
4H	2H	11.23	11.96	12.18	12.91	14.15	7.77	8.50	8.73	9.46	10.70
	3H	13.06	13.67	14.03	14.65	15.91	9.12	9.74	10.09	10.72	11.97
	4H	13.76	14.32	14.73	15.29	16.57	9.68	10.23	10.65	11.21	12.49
	6H	14.28	14.76	15.27	15.76	17.03	10.10	10.58	11.08	11.57	12.85
	8H	14.46	14.90	15.44	15.89	17.19	10.23	10.67	11.22	11.67	12.96
	12H	14.55	14.96	15.56	15.97	17.26	10.29	10.70	11.30	11.71	13.00
8H	4H	13.73	14.18	14.72	15.17	16.46	9.96	10.41	10.95	11.40	12.69
	6H	14.30	14.67	15.31	15.70	16.99	10.48	10.85	11.49	11.88	13.17
	8H	14.52	14.84	15.54	15.86	17.17	10.67	11.00	11.69	12.02	13.33
	12H	14.66	14.95	15.68	15.96	17.32	10.79	11.08	11.82	12.10	13.45
12H	4H	13.68	14.09	14.69	15.09	16.39	9.97	10.37	10.97	11.38	12.67
	6H	14.28	14.60	15.30	15.62	16.93	10.53	10.86	11.55	11.88	13.19
	8H	14.50	14.79	15.52	15.80	17.15	10.74	11.03	11.77	12.05	13.40

END OF REPORT