

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: P903394

Luminaire Tested: DFN2DIP-PN4F0-100D120US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903394
REPORT IS A COMBINATION OF REPORTS P899766 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-100D120US830-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

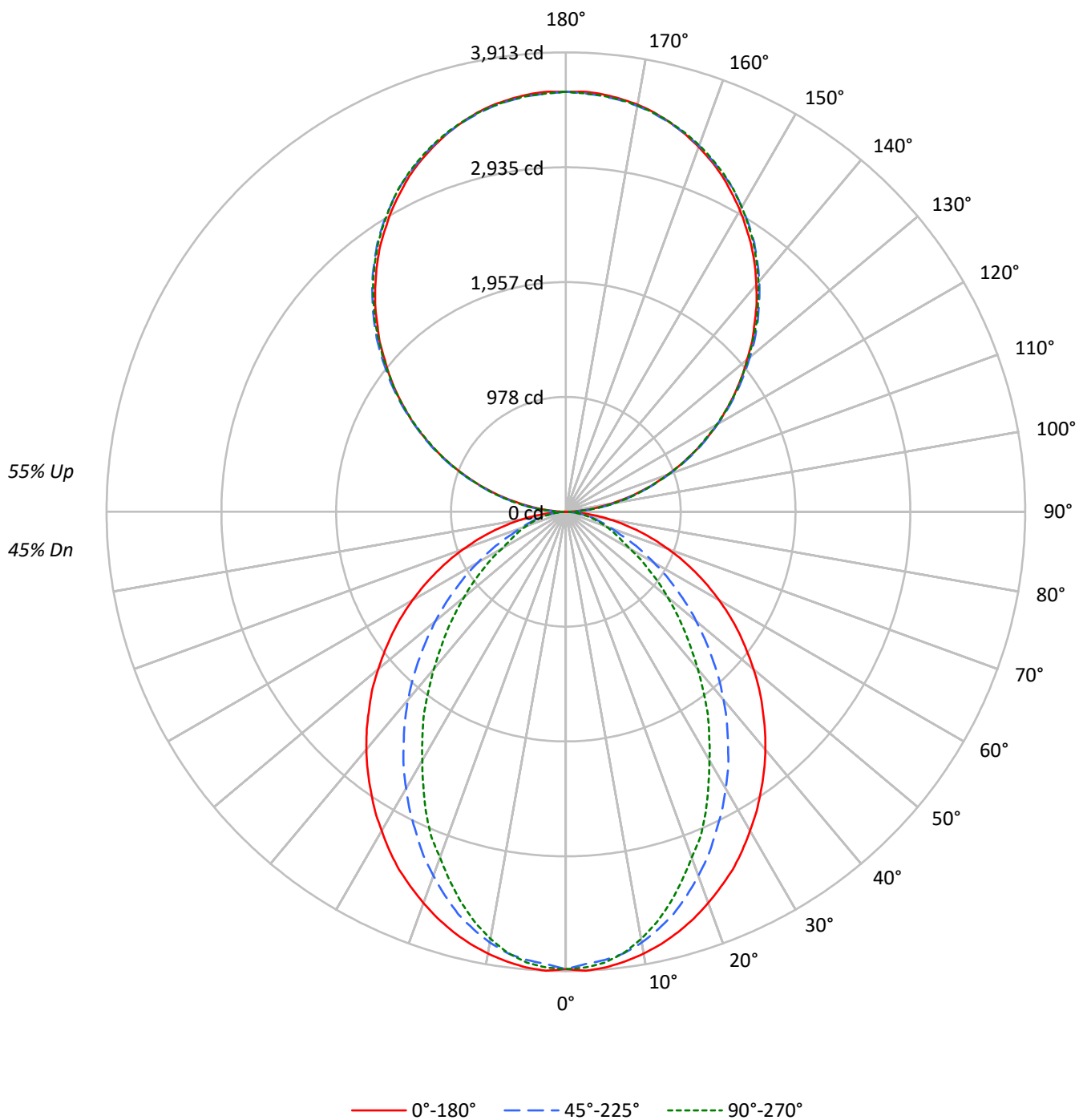
Lumens per Lamp: N/A
Luminaire Lumens: 18021.4 lumens
Efficiency: N/A
Efficacy: 88.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 204.5
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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51
1	97	93	89	86	89	85	82	79	71	69	67	58	56	55	46	45	44
2	89	82	76	71	81	75	70	66	63	59	56	51	49	47	41	39	38
3	81	72	65	59	74	66	60	55	56	51	47	46	43	40	37	34	33
4	74	64	56	51	68	59	52	47	50	45	41	41	37	35	33	30	28
5	68	57	49	44	63	53	46	41	45	39	35	37	33	30	30	27	25
6	63	51	44	38	58	48	41	36	40	35	31	34	30	27	27	24	22
7	58	47	39	33	54	43	36	31	37	31	28	31	27	24	25	22	20
8	54	42	35	30	50	39	33	28	34	28	25	28	24	21	23	20	18
9	51	39	31	27	46	36	29	25	31	26	22	26	22	19	21	18	16
10	47	36	29	24	43	33	27	23	28	23	20	24	20	17	20	17	15

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: 90°

Vertical Angle: 90°

Luminance: 2802 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	365.1	2.0
10°-20°	1002.2	5.6
20°-30°	1407.1	7.8
30°-40°	1533.9	8.5
40°-50°	1409.8	7.8
50°-60°	1107.2	6.1
60°-70°	720.7	4.0
70°-80°	371.0	2.1
80°-90°	104.9	0.6
90°-100°	221.3	1.2
100°-110°	703.3	3.9
110°-120°	1203.6	6.7
120°-130°	1582.9	8.8
130°-140°	1776.7	9.9
140°-150°	1742.3	9.7
150°-160°	1461.5	8.1
160°-170°	969.3	5.4
170°-180°	338.8	1.9
0°-30°	2774.5	15.4
0°-40°	4308.3	23.9
0°-60°	6825.3	37.9
0°-90°	8021.7	44.5
90°-120°	2128.2	11.8
90°-150°	7230.1	40.1
90°-180°	10000.0	55.5
0°-180°	18021.4	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°	3	39	106	99	102	18
95°	157	188	193	193	188	175
105°	649	658	664	670	670	685
115°	1208	1225	1220	1216	1208	1195
125°	1757	1784	1775	1765	1762	1570
135°	2272	2306	2312	2309	2300	1756
145°	2758	2780	2797	2801	2789	1724
155°	3154	3163	3173	3188	3178	1452
165°	3432	3428	3428	3450	3435	968
175°	3571	3562	3556	3577	3559	339
180°	3577	3577	3577	3577	3577	

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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°	3.2	38.8	105.7	99.2	102.5
92.5°	66.8	90.6	93.8	97.1	97.1
95°	157.4	187.7	193.0	193.0	187.7
97.5°	262.0	290.1	302.0	302.0	302.0
100°	382.9	407.6	416.2	416.2	413.0
102.5°	510.1	528.4	540.3	543.6	540.3
105°	649.2	657.8	664.3	669.7	669.7
107.5°	787.2	800.2	800.2	802.3	787.2
110°	921.0	938.2	938.2	938.2	929.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1065.4	1083.8	1080.5	1072.0	1065.4
115°	1207.8	1225.1	1219.6	1216.4	1207.8
117.5°	1349.1	1372.8	1357.7	1349.1	1340.5
120°	1491.5	1515.1	1491.5	1491.5	1481.8
122.5°	1620.9	1651.1	1636.0	1627.3	1620.9
125°	1756.7	1783.7	1775.1	1765.4	1762.1
127.5°	1889.4	1922.8	1910.9	1898.0	1889.4
130°	2013.4	2052.2	2046.8	2040.3	2028.4
132.5°	2152.5	2182.7	2184.8	2169.7	2161.2
135°	2272.2	2305.6	2312.2	2308.9	2300.3
137.5°	2405.9	2432.9	2438.3	2436.1	2423.2
140°	2523.5	2550.4	2565.5	2565.5	2553.6
142.5°	2644.3	2671.3	2679.8	2683.0	2671.3
145°	2758.5	2780.1	2797.4	2800.7	2788.8
147.5°	2861.0	2887.9	2901.0	2906.3	2894.5
150°	2966.7	2985.0	2996.9	3006.6	2996.9
152.5°	3060.5	3078.8	3094.0	3105.9	3094.0
155°	3154.3	3163.0	3172.7	3187.8	3178.1
157.5°	3235.3	3241.7	3247.1	3268.6	3253.6
160°	3307.5	3314.0	3317.2	3335.6	3322.6
162.5°	3374.3	3374.3	3377.6	3398.1	3383.0
165°	3431.5	3428.3	3428.3	3449.8	3434.7
167.5°	3483.3	3473.6	3473.6	3495.1	3480.1
170°	3522.1	3513.4	3510.2	3531.8	3513.4
172.5°	3549.0	3540.4	3537.2	3558.8	3540.4
175°	3570.6	3562.0	3555.6	3577.0	3558.8
177.5°	3582.5	3573.8	3567.3	3585.7	3567.3
180°	3577.0	3577.0	3577.0	3577.0	3577.0

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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	10.25	11.04	11.26	12.05	13.40	6.21	7.00	7.22	8.02	9.37
	3H	11.93	12.63	12.94	13.65	15.02	7.40	8.10	8.42	9.13	10.50
	4H	12.53	13.20	13.57	14.23	15.60	7.85	8.51	8.88	9.54	10.92
	6H	12.96	13.57	14.00	14.60	15.99	8.17	8.78	9.21	9.81	11.20
	8H	13.08	13.67	14.13	14.71	16.10	8.26	8.84	9.30	9.89	11.27
	12H	13.14	13.70	14.20	14.74	16.15	8.30	8.85	9.35	9.89	11.30
4H	2H	10.26	10.93	11.30	11.95	13.33	6.80	7.47	7.84	8.50	9.88
	3H	12.09	12.64	13.14	13.70	15.09	8.15	8.71	9.20	9.76	11.15
	4H	12.78	13.29	13.83	14.34	15.75	8.70	9.21	9.75	10.25	11.67
	6H	13.30	13.73	14.36	14.80	16.21	9.12	9.55	10.18	10.62	12.03
	8H	13.47	13.88	14.54	14.94	16.37	9.25	9.65	10.31	10.71	12.14
	12H	13.57	13.94	14.65	15.01	16.44	9.31	9.68	10.39	10.75	12.18
8H	4H	12.75	13.15	13.81	14.22	15.64	8.98	9.38	10.04	10.45	11.87
	6H	13.31	13.65	14.40	14.75	16.17	9.50	9.83	10.58	10.93	12.36
	8H	13.53	13.83	14.63	14.91	16.36	9.69	9.98	10.78	11.07	12.51
	12H	13.67	13.93	14.77	15.01	16.49	9.81	10.06	10.90	11.15	12.63
12H	4H	12.70	13.06	13.78	14.14	15.57	8.98	9.35	10.06	10.42	11.85
	6H	13.29	13.58	14.38	14.67	16.11	9.55	9.84	10.64	10.93	12.37
	8H	13.51	13.77	14.61	14.85	16.33	9.76	10.01	10.85	11.10	12.58

END OF REPORT