

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: P903363

Luminaire Tested: DFN2DIP-PN4F0-100D040US830-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P903363
REPORT IS A COMBINATION OF REPORTS P901142 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-100D040US830-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

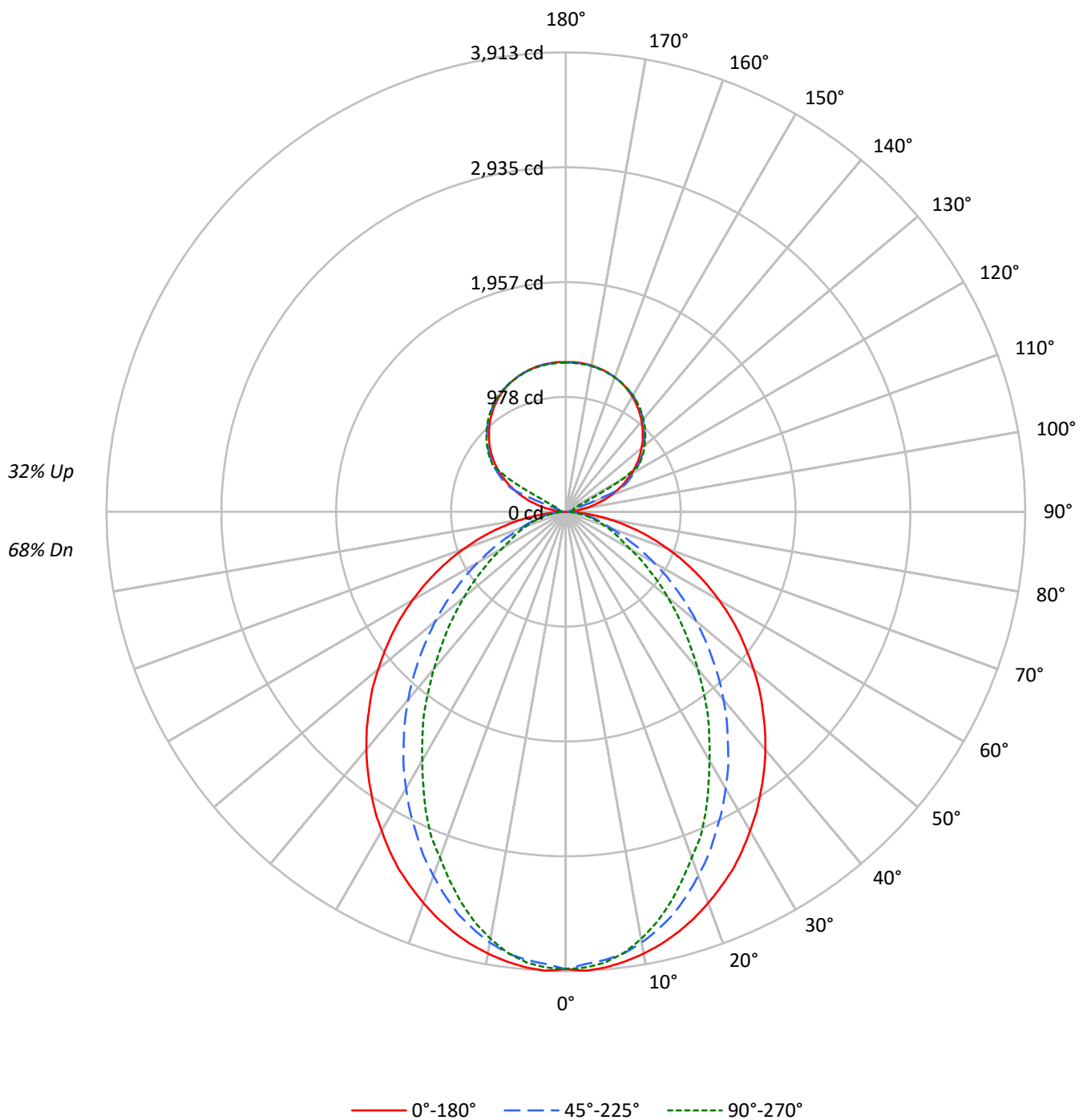
Lumens per Lamp: N/A
Luminaire Lumens: 11744.1 lumens
Efficiency: N/A
Efficacy: 89.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 131.3
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			0
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50	30	10	0
RCR																				
0	111	111	111	111	105	105	105	105	93	93	93		83	83	83		73	73	73	68
1	103	98	95	91	97	93	90	87	83	81	78		74	72	70		65	64	63	59
2	94	87	81	76	88	82	77	72	74	69	66		66	63	60		58	56	54	50
3	86	77	70	64	81	73	66	61	66	60	56		59	55	51		52	49	47	43
4	79	69	61	55	75	65	58	53	59	53	49		53	48	45		47	44	41	38
5	73	62	53	48	69	59	51	46	53	47	42		48	43	39		43	39	36	33
6	68	56	47	42	64	53	46	40	48	42	38		43	39	35		39	35	32	30
7	63	50	43	37	59	48	41	36	44	38	33		40	35	31		36	32	29	26
8	58	46	38	33	55	44	37	32	40	34	30		37	32	28		33	29	26	24
9	55	42	35	30	52	41	34	29	37	31	27		34	29	25		31	27	24	22
10	51	39	32	27	48	37	31	26	34	29	25		31	27	23		29	25	22	20

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	3.1
10°-20°	1002.2	8.5
20°-30°	1407.1	12.0
30°-40°	1533.9	13.1
40°-50°	1409.8	12.0
50°-60°	1107.2	9.4
60°-70°	720.7	6.1
70°-80°	371.0	3.2
80°-90°	96.9	0.8
90°-100°	41.9	0.4
100°-110°	156.4	1.3
110°-120°	414.8	3.5
120°-130°	688.0	5.9
130°-140°	730.8	6.2
140°-150°	679.2	5.8
150°-160°	546.1	4.6
160°-170°	351.9	3.0
170°-180°	121.1	1.0
0°-30°	2774.5	23.6
0°-40°	4308.3	36.7
0°-60°	6825.3	58.1
0°-90°	8013.8	68.2
90°-120°	613.2	5.2
90°-150°	2711.2	23.1
90°-180°	3730.0	31.8
0°-180°	11744.1	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°	1	11	18	23	25	11
95°	60	29	36	40	40	71
105°	280	308	56	66	70	299
115°	529	545	568	142	76	521
125°	748	760	778	784	787	668
135°	926	941	949	958	957	715
145°	1074	1074	1089	1096	1091	672
155°	1183	1175	1186	1191	1184	545
165°	1247	1241	1244	1250	1244	352
175°	1275	1269	1270	1277	1268	121
180°	1272	1272	1272	1272	1272	

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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°	0.8	11.0	18.4	23.1	24.8
92.5°	23.1	19.3	22.1	23.9	24.8
95°	59.8	29.4	35.8	40.5	39.6
97.5°	107.7	32.2	46.9	49.8	50.6
100°	163.0	36.9	52.5	59.8	61.6
102.5°	223.7	222.0	54.3	64.4	67.2
105°	279.8	307.6	56.2	66.3	69.9
107.5°	345.3	368.3	58.1	68.1	71.8
110°	407.9	427.2	161.2	69.1	72.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	466.8	483.3	467.7	70.9	73.7
115°	529.3	545.0	568.1	141.8	75.6
117.5°	583.7	602.1	617.8	486.1	244.9
120°	644.5	658.3	674.9	686.0	561.7
122.5°	696.0	710.8	729.2	734.7	735.7
125°	748.5	760.5	778.0	784.5	787.2
127.5°	796.4	809.3	823.1	832.4	833.2
130°	841.5	856.3	866.3	876.5	875.6
132.5°	887.5	899.6	909.6	917.9	917.1
135°	926.2	941.0	949.2	958.5	956.7
137.5°	966.7	977.7	987.0	996.2	993.4
140°	1006.3	1013.7	1023.8	1032.1	1027.5
142.5°	1039.5	1045.9	1057.9	1065.2	1060.6
145°	1074.5	1073.6	1089.1	1095.6	1091.0
147.5°	1104.8	1102.0	1117.7	1122.3	1118.7
150°	1134.3	1127.8	1142.6	1148.1	1143.5
152.5°	1159.1	1151.8	1165.5	1171.1	1164.7
155°	1183.1	1174.9	1185.9	1191.4	1184.0
157.5°	1202.4	1195.0	1203.4	1209.8	1202.4
160°	1219.0	1213.4	1219.0	1224.5	1218.0
162.5°	1233.7	1228.2	1232.8	1239.3	1231.0
165°	1246.6	1241.1	1243.9	1250.3	1243.9
167.5°	1256.8	1251.1	1254.1	1260.5	1252.2
170°	1265.1	1259.5	1261.3	1267.8	1259.5
172.5°	1270.5	1265.1	1267.0	1273.4	1265.1
175°	1275.1	1268.7	1270.5	1277.0	1267.8
177.5°	1277.0	1270.5	1271.5	1278.0	1269.7
180°	1272.4	1272.4	1272.4	1272.4	1272.4

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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	12.34	13.34	13.13	14.15	15.14	8.30	9.31	9.10	10.12	11.10
	3H	14.03	14.93	14.84	15.75	16.77	9.51	10.41	10.31	11.22	12.24
	4H	14.65	15.50	15.47	16.32	17.35	9.97	10.81	10.79	11.64	12.67
	6H	15.08	15.87	15.92	16.70	17.74	10.30	11.08	11.13	11.91	12.95
	8H	15.22	15.96	16.06	16.81	17.85	10.39	11.14	11.24	11.99	13.03
	12H	15.29	15.99	16.13	16.84	17.91	10.44	11.15	11.29	11.99	13.06
4H	2H	12.38	13.23	13.20	14.05	15.08	8.92	9.77	9.75	10.60	11.62
	3H	14.23	14.93	15.06	15.79	16.83	10.29	10.99	11.13	11.85	12.90
	4H	14.93	15.57	15.78	16.42	17.50	10.85	11.48	11.69	12.34	13.41
	6H	15.46	16.01	16.32	16.89	17.96	11.27	11.83	12.14	12.71	13.78
	8H	15.64	16.15	16.50	17.03	18.12	11.41	11.92	12.28	12.80	13.89
	12H	15.74	16.20	16.63	17.10	18.19	11.48	11.94	12.37	12.84	13.93
8H	4H	14.91	15.42	15.78	16.30	17.39	11.14	11.65	12.01	12.53	13.62
	6H	15.48	15.91	16.38	16.83	17.92	11.67	12.09	12.56	13.01	14.10
	8H	15.70	16.08	16.61	16.99	18.10	11.86	12.24	12.77	13.15	14.25
	12H	15.85	16.18	16.76	17.09	18.25	11.99	12.32	12.89	13.22	14.38
12H	4H	14.87	15.33	15.76	16.23	17.32	11.15	11.62	12.04	12.51	13.61
	6H	15.46	15.84	16.37	16.75	17.86	11.72	12.09	12.62	13.01	14.11
	8H	15.69	16.02	16.60	16.93	18.09	11.94	12.27	12.84	13.17	14.33

END OF REPORT