

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: P917039

Luminaire Tested: DFN2DIP-PN4F0-110D040US930-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917039
REPORT IS A COMBINATION OF REPORTS P901144 AND P898053
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-110D040US930-RLLONL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

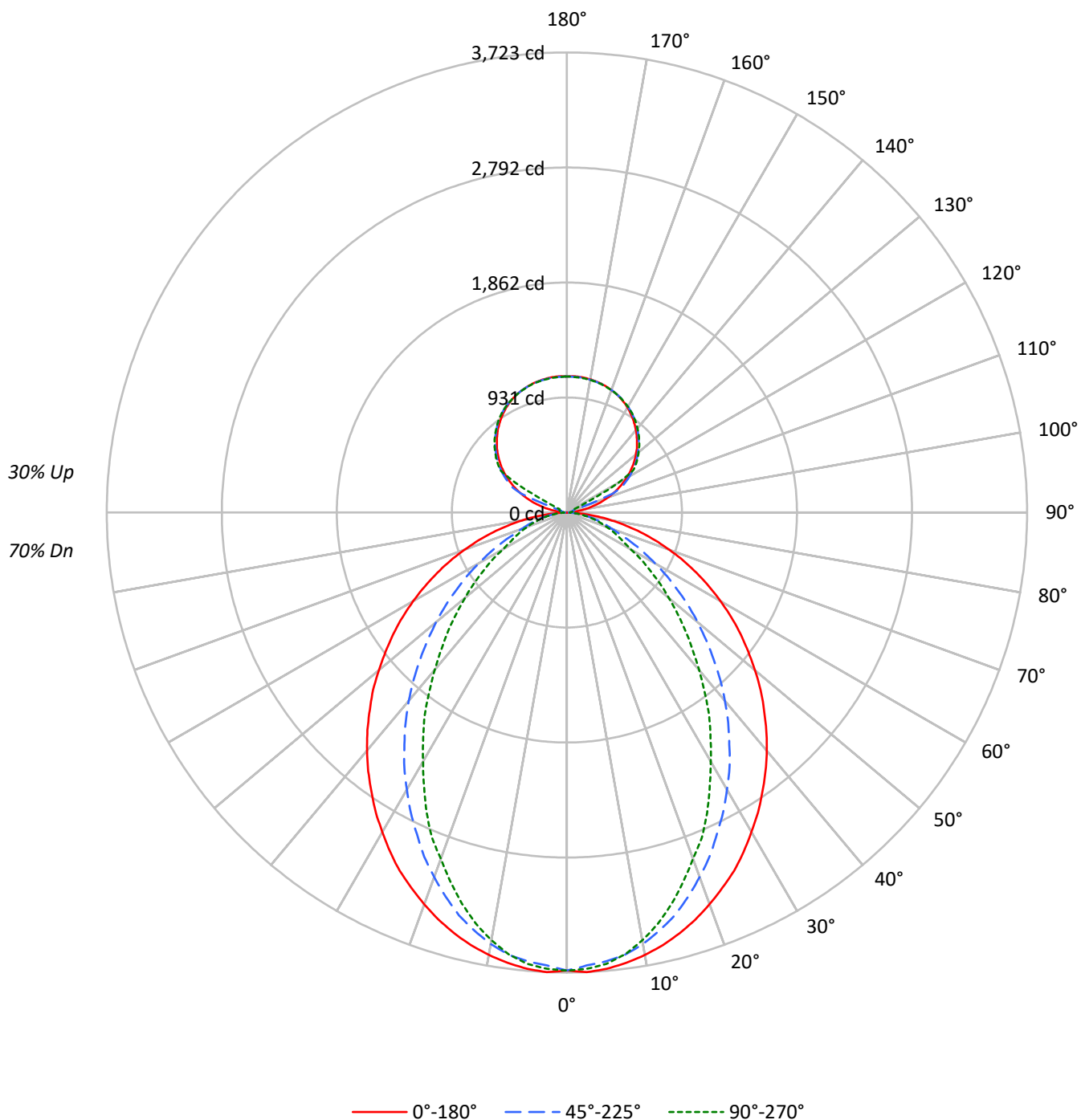
Lumens per Lamp: N/A
Luminaire Lumens: 10851.6 lumens
Efficiency: N/A
Efficacy: 75.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 144.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.996
Total Harmonic Distortion (THDi): 0.064
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	112	112	112	112	106	106	106	106	95	95	95	84	84	84	75	75	75
1	103	99	95	92	97	94	90	87	84	82	79	75	73	72	67	66	64
2	94	87	81	76	89	83	77	73	75	70	67	67	64	61	60	58	55
3	87	77	70	64	82	73	67	62	66	61	57	60	56	52	54	51	48
4	80	69	61	55	75	66	59	53	60	54	49	54	49	46	48	45	42
5	73	62	54	48	69	59	52	46	54	48	43	49	44	40	44	40	37
6	68	56	48	42	64	53	46	41	49	43	38	44	39	35	40	36	33
7	63	51	43	37	60	49	41	36	44	38	34	41	36	32	37	33	30
8	59	46	39	33	56	45	37	32	41	35	30	37	32	29	34	30	27
9	55	43	35	30	52	41	34	29	38	32	28	35	30	26	32	27	24
10	52	39	32	27	49	38	31	27	35	29	25	32	27	24	29	25	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2706	2706	2706
5°	2710	2663	2680
10°	2683	2611	2594
15°	2646	2525	2459
20°	2597	2407	2294
25°	2547	2274	2135
30°	2480	2137	1932
35°	2414	1990	1755
40°	2347	1839	1551
45°	2269	1670	1366
50°	2189	1500	1185
55°	2105	1318	1012
60°	2008	1128	833
65°	1896	934	751
70°	1760	754	680
75°	1590	665	620
80°	1343	559	539
85°	935	375	409

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2269 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	347.4	3.2
10°-20°	953.6	8.8
20°-30°	1338.9	12.3
30°-40°	1459.5	13.4
40°-50°	1341.4	12.4
50°-60°	1053.5	9.7
60°-70°	685.7	6.3
70°-80°	353.0	3.3
80°-90°	92.1	0.8
90°-100°	36.3	0.3
100°-110°	135.3	1.2
110°-120°	358.8	3.3
120°-130°	595.1	5.5
130°-140°	632.1	5.8
140°-150°	587.5	5.4
150°-160°	472.3	4.4
160°-170°	304.4	2.8
170°-180°	104.8	1.0
0°-30°	2639.9	24.3
0°-40°	4099.4	37.8
0°-60°	6494.2	59.8
0°-90°	7625.0	70.3
90°-120°	530.4	4.9
90°-150°	2345.2	21.6
90°-180°	3227.0	29.7
0°-180°	10851.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3707	3707	3707	3707	3707	
5°	3707	3690	3646	3676	3666	351
15°	3525	3488	3374	3311	3277	993
25°	3200	3093	2871	2734	2683	1472
35°	2757	2586	2291	2080	2006	1726
45°	2254	2029	1677	1439	1358	1741
55°	1714	1452	1090	889	825	1532
65°	1157	885	584	470	459	1147
75°	617	382	268	245	242	653
85°	144	74	64	64	64	165
90°	1	10	16	20	21	10
95°	52	25	31	35	34	61
105°	242	266	49	57	60	259
115°	458	471	491	123	65	451
125°	647	658	673	679	681	577
135°	801	814	821	829	828	619
145°	929	929	942	948	944	581
155°	1023	1016	1026	1030	1024	472
165°	1078	1074	1076	1082	1076	305
175°	1103	1097	1099	1105	1097	105
180°	1101	1101	1101	1101	1101	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3706.6	3706.6	3706.6	3706.6	3706.6
2.5°	3723.3	3706.6	3669.6	3703.4	3696.6
5°	3706.6	3689.9	3646.1	3676.3	3666.4
7.5°	3676.3	3656.4	3609.4	3622.6	3605.8
10°	3636.1	3612.6	3545.7	3535.4	3515.5
12.5°	3585.9	3555.7	3464.9	3445.0	3407.9
15°	3525.4	3488.4	3374.5	3310.8	3277.3
17.5°	3455.0	3401.3	3260.3	3186.6	3132.9
20°	3374.5	3307.3	3139.6	3056.0	2982.0
22.5°	3287.4	3210.1	3015.5	2901.6	2851.3
25°	3200.1	3092.7	2871.3	2733.9	2683.4
27.5°	3096.3	2982.0	2737.1	2579.4	2502.2
30°	2985.5	2857.8	2589.5	2418.6	2327.8
32.5°	2878.1	2723.6	2448.8	2247.5	2163.5
35°	2757.4	2586.2	2291.2	2079.8	2005.8
37.5°	2640.0	2455.3	2143.5	1911.8	1828.2
40°	2515.8	2314.7	1989.1	1750.9	1663.8
42.5°	2388.3	2173.7	1835.0	1586.6	1502.9
45°	2254.2	2029.3	1677.3	1438.8	1358.4
47.5°	2126.8	1888.7	1526.4	1287.9	1214.3
50°	1985.8	1747.8	1378.8	1147.0	1076.9
52.5°	1848.1	1596.5	1237.8	1016.4	952.7
55°	1713.9	1452.4	1090.1	889.0	825.3
57.5°	1576.6	1308.2	959.4	771.6	717.8
60°	1435.7	1167.3	821.7	650.9	597.2
62.5°	1298.3	1030.0	704.3	543.5	516.7
65°	1157.3	885.4	583.7	469.8	459.4
67.5°	1023.2	751.3	469.8	412.5	402.5
70°	882.2	620.7	389.0	355.6	342.0
72.5°	748.0	499.7	325.3	298.6	291.8
75°	617.1	382.2	268.3	244.8	241.7
77.5°	486.5	271.6	211.4	197.9	191.1
80°	365.5	194.7	160.9	147.7	147.7
82.5°	254.8	130.9	110.7	104.0	104.0
85°	144.1	73.7	63.7	63.7	63.7
87.5°	53.7	26.7	26.7	23.5	23.5
90°	0.7	9.5	15.9	20.0	21.4
92.5°	20.0	16.7	19.1	20.7	21.4
95°	51.7	25.4	31.0	35.1	34.2
97.5°	93.2	27.9	40.6	43.0	43.8
100°	141.0	31.9	45.4	51.7	53.3
102.5°	193.5	192.0	47.0	55.7	58.1
105°	242.1	266.0	48.6	57.3	60.5
107.5°	298.6	318.5	50.2	58.9	62.1
110°	352.9	369.5	139.4	59.8	62.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	403.8	418.1	404.6	61.3	63.8
115°	457.9	471.4	491.4	122.6	65.4
117.5°	504.9	520.8	534.4	420.4	211.8
120°	557.5	569.4	583.8	593.4	485.8
122.5°	602.0	614.8	630.8	635.5	636.3
125°	647.4	657.9	672.9	678.6	680.9
127.5°	688.8	700.0	712.0	720.0	720.7
130°	727.9	740.7	749.3	758.1	757.4
132.5°	767.7	778.1	786.8	794.0	793.3
135°	801.2	814.0	821.1	829.1	827.5
137.5°	836.2	845.7	853.8	861.7	859.3
140°	870.4	876.9	885.6	892.8	888.8
142.5°	899.2	904.7	915.1	921.4	917.5
145°	929.4	928.6	942.1	947.7	943.7
147.5°	955.6	953.2	966.8	970.8	967.7
150°	981.1	975.6	988.4	993.1	989.1
152.5°	1002.7	996.3	1008.2	1013.0	1007.5
155°	1023.4	1016.3	1025.8	1030.5	1024.2
157.5°	1040.1	1033.7	1041.0	1046.5	1040.1
160°	1054.4	1049.6	1054.4	1059.2	1053.6
162.5°	1067.1	1062.4	1066.4	1072.0	1064.8
165°	1078.3	1073.6	1075.9	1081.5	1075.9
167.5°	1087.1	1082.2	1084.8	1090.3	1083.1
170°	1094.3	1089.5	1091.0	1096.7	1089.5
172.5°	1099.0	1094.3	1095.9	1101.5	1094.3
175°	1102.9	1097.4	1099.0	1104.6	1096.7
177.5°	1104.6	1099.0	1099.8	1105.5	1098.3
180°	1100.7	1100.7	1100.7	1100.7	1100.7

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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	12.33	13.35	13.09	14.14	15.09	8.29	9.32	9.06	10.10	11.06
	3H	14.02	14.94	14.80	15.74	16.72	9.50	10.42	10.28	11.21	12.19
	4H	14.64	15.51	15.44	16.31	17.31	9.96	10.82	10.76	11.63	12.62
	6H	15.07	15.87	15.89	16.69	17.69	10.29	11.09	11.10	11.90	12.90
	8H	15.21	15.97	16.03	16.80	17.81	10.38	11.14	11.21	11.97	12.98
	12H	15.28	16.00	16.10	16.83	17.86	10.43	11.16	11.26	11.98	13.02
4H	2H	12.37	13.23	13.17	14.04	15.03	8.91	9.78	9.72	10.58	11.58
	3H	14.22	14.94	15.03	15.78	16.79	10.28	11.00	11.10	11.84	12.85
	4H	14.92	15.57	15.75	16.41	17.45	10.84	11.49	11.67	12.33	13.37
	6H	15.45	16.01	16.29	16.87	17.92	11.27	11.83	12.11	12.69	13.74
	8H	15.63	16.16	16.48	17.01	18.07	11.40	11.93	12.25	12.78	13.84
	12H	15.74	16.21	16.60	17.09	18.15	11.48	11.95	12.34	12.83	13.89
8H	4H	14.90	15.43	15.75	16.29	17.34	11.13	11.66	11.98	12.52	13.57
	6H	15.48	15.91	16.36	16.81	17.87	11.66	12.10	12.54	12.99	14.05
	8H	15.70	16.08	16.59	16.98	18.05	11.85	12.24	12.74	13.13	14.21
	12H	15.85	16.19	16.74	17.07	18.20	11.98	12.32	12.87	13.21	14.33
12H	4H	14.86	15.34	15.73	16.21	17.27	11.15	11.62	12.02	12.50	13.56
	6H	15.45	15.84	16.34	16.74	17.81	11.71	12.10	12.60	12.99	14.06
	8H	15.69	16.03	16.58	16.91	18.04	11.93	12.27	12.82	13.16	14.28

END OF REPORT