

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: P919694

Luminaire Tested: DFN2DIP-PN4F0-090D040US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919694
REPORT IS A COMBINATION OF REPORTS P899620 AND P896497
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN4F0-090D040US935-RLLFLL
Description: 4 foot, Pentagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

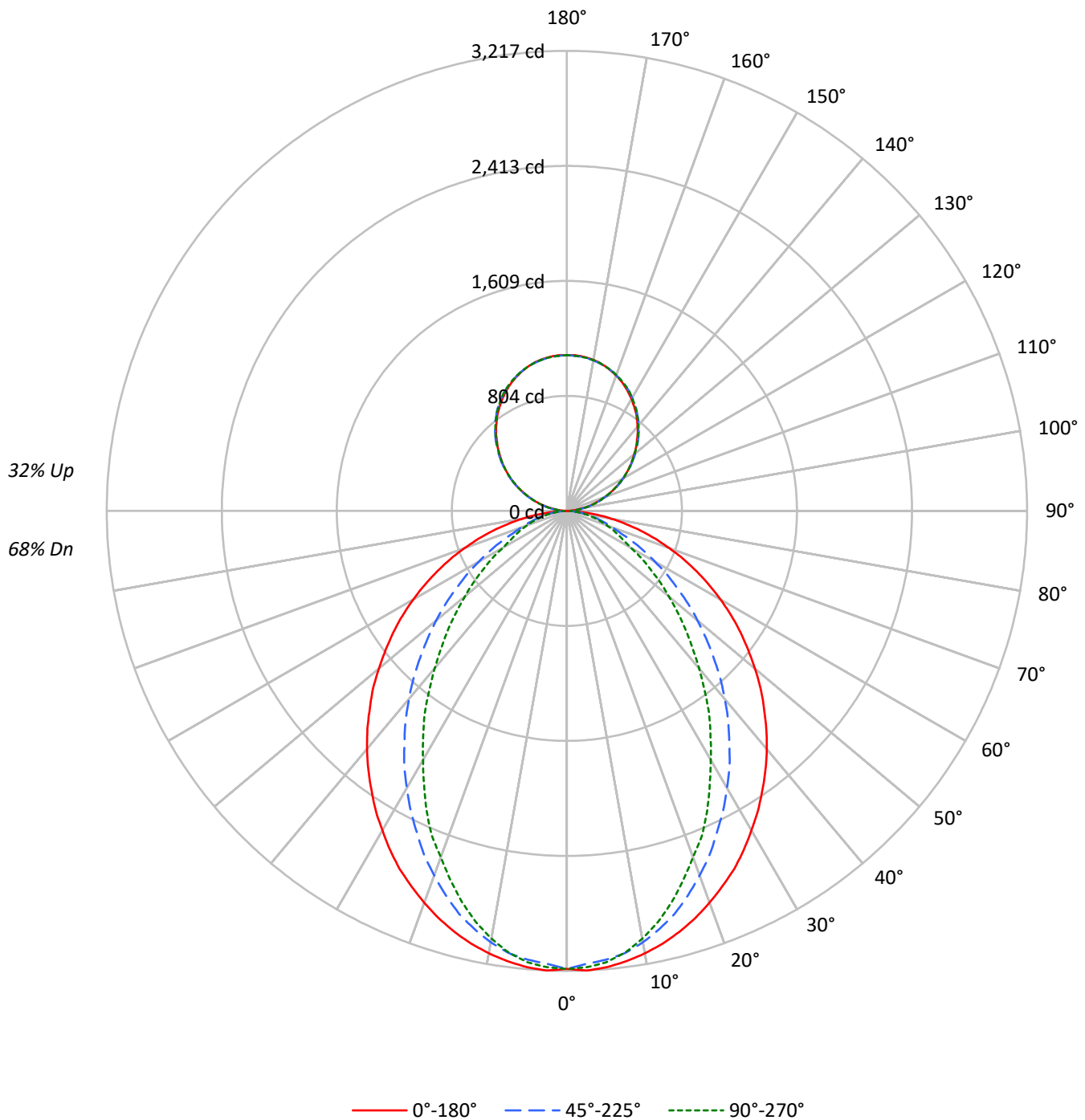
Lumens per Lamp: N/A
Luminaire Lumens: 9634.6 lumens
Efficiency: N/A
Efficacy: 81.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.74' x L: 3.94' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 118.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9963
Total Harmonic Distortion (THDi): 0.065
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	105	105	105	105	94	94	94	83	83	83	73	73	73
1	103	98	95	91	97	93	90	87	83	81	78	74	72	70	66	64	63
2	94	87	81	76	89	82	77	72	74	70	66	66	63	60	59	56	54
3	86	77	70	64	81	73	67	61	66	61	56	59	55	51	52	49	47
4	79	69	61	55	75	65	58	53	59	53	49	53	48	45	47	44	41
5	73	62	53	48	69	59	51	46	53	47	43	48	43	39	43	39	36
6	68	56	48	42	64	53	46	40	48	42	38	44	39	35	39	35	32
7	63	51	43	37	59	48	41	36	44	38	33	40	35	31	36	32	29
8	58	46	38	33	55	44	37	32	40	34	30	37	32	28	33	29	26
9	55	42	35	30	52	41	34	29	37	31	27	34	29	25	31	27	24
10	51	39	32	27	48	37	31	26	34	29	25	32	27	23	29	25	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2338	2338	2338
5°	2342	2301	2316
10°	2318	2256	2241
15°	2286	2182	2125
20°	2244	2079	1982
25°	2201	1964	1844
30°	2143	1847	1670
35°	2086	1720	1516
40°	2028	1589	1340
45°	1961	1443	1180
50°	1891	1296	1024
55°	1819	1139	874
60°	1735	975	720
65°	1638	807	649
70°	1521	651	588
75°	1374	575	536
80°	1160	483	466
85°	808	324	353

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 1961 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	300.2	3.1
10°-20°	824.0	8.6
20°-30°	1156.9	12.0
30°-40°	1261.0	13.1
40°-50°	1159.0	12.0
50°-60°	910.3	9.4
60°-70°	592.5	6.1
70°-80°	305.0	3.2
80°-90°	80.9	0.8
90°-100°	67.4	0.7
100°-110°	214.2	2.2
110°-120°	366.5	3.8
120°-130°	482.0	5.0
130°-140°	541.0	5.6
140°-150°	530.5	5.5
150°-160°	445.0	4.6
160°-170°	295.1	3.1
170°-180°	103.2	1.1
0°-30°	2281.0	23.7
0°-40°	3542.0	36.8
0°-60°	5611.3	58.2
0°-90°	6589.7	68.4
90°-120°	648.0	6.7
90°-150°	2201.5	22.9
90°-180°	3045.0	31.6
0°-180°	9634.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3203	3203	3203	3203	3203	
5°	3203	3188	3150	3176	3168	304
15°	3046	3014	2916	2861	2832	858
25°	2765	2672	2481	2362	2319	1272
35°	2383	2235	1980	1797	1733	1491
45°	1948	1753	1449	1243	1174	1504
55°	1481	1255	942	768	713	1323
65°	1000	765	504	406	397	991
75°	533	330	232	212	209	564
85°	124	64	55	55	55	143
90°	1	12	32	30	31	9
95°	48	57	59	59	57	53
105°	198	200	202	204	204	209
115°	368	373	371	370	368	364
125°	535	543	540	538	537	478
135°	692	702	704	703	700	535
145°	840	846	852	853	849	525
155°	960	963	966	971	968	442
165°	1045	1044	1044	1050	1046	295
175°	1087	1085	1083	1089	1084	103
180°	1089	1089	1089	1089	1089	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3202.7	3202.7	3202.7	3202.7	3202.7
2.5°	3217.1	3202.7	3170.6	3199.9	3194.0
5°	3202.7	3188.2	3150.4	3176.5	3167.9
7.5°	3176.5	3159.3	3118.7	3130.1	3115.6
10°	3141.8	3121.5	3063.7	3054.7	3037.5
12.5°	3098.4	3072.3	2993.9	2976.6	2944.6
15°	3046.1	3014.2	2915.8	2860.7	2831.8
17.5°	2985.3	2938.8	2817.0	2753.4	2707.0
20°	2915.8	2857.7	2712.7	2640.5	2576.5
22.5°	2840.4	2773.7	2605.5	2507.1	2463.7
25°	2765.1	2672.2	2481.0	2362.2	2318.6
27.5°	2675.3	2576.5	2365.0	2228.8	2162.1
30°	2579.6	2469.3	2237.4	2089.8	2011.4
32.5°	2486.7	2353.3	2115.9	1941.9	1869.3
35°	2382.6	2234.6	1979.7	1797.1	1733.1
37.5°	2281.0	2121.5	1852.1	1651.9	1579.7
40°	2173.8	2000.0	1718.6	1512.9	1437.6
42.5°	2063.6	1878.3	1585.4	1370.9	1298.6
45°	1947.7	1753.4	1449.2	1243.2	1173.7
47.5°	1837.6	1631.9	1318.9	1112.8	1049.2
50°	1715.9	1510.1	1191.3	991.1	930.5
52.5°	1596.9	1379.5	1069.5	878.2	823.2
55°	1480.9	1254.9	941.8	768.2	713.1
57.5°	1362.3	1130.4	829.1	666.7	620.3
60°	1240.4	1008.6	710.1	562.4	516.0
62.5°	1121.8	889.9	608.6	469.6	446.5
65°	1000.0	765.1	504.3	405.9	397.0
67.5°	884.1	649.1	405.9	356.4	347.8
70°	762.3	536.3	336.1	307.2	295.5
72.5°	646.4	431.7	281.0	258.0	252.2
75°	533.2	330.3	231.9	211.5	208.8
77.5°	420.3	234.6	182.6	171.0	165.1
80°	315.8	168.2	139.0	127.6	127.6
82.5°	220.2	113.1	95.7	89.8	89.8
85°	124.5	63.6	55.0	55.0	55.0
87.5°	46.4	23.1	23.1	20.3	20.3
90°	0.9	11.8	32.2	30.2	31.2
92.5°	20.3	27.6	28.6	29.5	29.5
95°	48.0	57.2	58.8	58.8	57.2
97.5°	79.8	88.3	92.0	92.0	92.0
100°	116.6	124.2	126.7	126.7	125.8
102.5°	155.3	160.9	164.5	165.5	164.5
105°	197.7	200.3	202.2	203.9	203.9
107.5°	239.7	243.7	243.7	244.3	239.7
110°	280.4	285.7	285.7	285.7	283.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	324.4	330.0	329.0	326.4	324.4
115°	367.7	373.1	371.3	370.4	367.7
117.5°	410.8	418.0	413.5	410.8	408.2
120°	454.2	461.3	454.2	454.2	451.2
122.5°	493.5	502.7	498.2	495.5	493.5
125°	534.9	543.1	540.5	537.5	536.6
127.5°	575.3	585.5	581.9	577.9	575.3
130°	613.0	624.9	623.3	621.3	617.7
132.5°	655.4	664.6	665.3	660.6	658.1
135°	691.9	702.1	704.0	703.0	700.4
137.5°	732.6	740.8	742.4	741.7	737.9
140°	768.4	776.6	781.2	781.2	777.6
142.5°	805.2	813.4	816.0	817.0	813.4
145°	840.0	846.5	851.8	852.8	849.2
147.5°	871.2	879.3	883.3	884.9	881.3
150°	903.4	909.0	912.6	915.5	912.6
152.5°	931.9	937.5	942.1	945.7	942.1
155°	960.4	963.1	966.0	970.7	967.7
157.5°	985.2	987.0	988.7	995.3	990.7
160°	1007.1	1009.1	1010.0	1015.6	1011.7
162.5°	1027.4	1027.4	1028.5	1034.7	1030.1
165°	1044.9	1043.9	1043.9	1050.4	1045.9
167.5°	1060.7	1057.6	1057.6	1064.3	1059.6
170°	1072.5	1069.8	1068.8	1075.4	1069.8
172.5°	1080.6	1078.1	1077.0	1083.7	1078.1
175°	1087.3	1084.6	1082.6	1089.2	1083.7
177.5°	1090.9	1088.2	1086.2	1091.8	1086.2
180°	1089.2	1089.2	1089.2	1089.2	1089.2

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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	11.67	12.68	12.46	13.48	14.47	7.64	8.64	8.43	9.45	10.43
	3H	13.36	14.27	14.17	15.08	16.10	8.84	9.74	9.64	10.56	11.57
	4H	13.98	14.83	14.80	15.66	16.68	9.30	10.15	10.12	10.97	12.00
	6H	14.42	15.20	15.25	16.03	17.07	9.63	10.41	10.46	11.24	12.28
	8H	14.55	15.29	15.39	16.14	17.18	9.72	10.47	10.57	11.32	12.36
	12H	14.62	15.33	15.46	16.17	17.23	9.77	10.48	10.62	11.33	12.39
4H	2H	11.71	12.56	12.53	13.38	14.41	8.25	9.10	9.08	9.93	10.95
	3H	13.56	14.26	14.39	15.12	16.16	9.62	10.33	10.46	11.18	12.23
	4H	14.26	14.90	15.11	15.76	16.83	10.18	10.82	11.03	11.67	12.74
	6H	14.79	15.34	15.65	16.22	17.29	10.61	11.16	11.47	12.04	13.11
	8H	14.97	15.48	15.84	16.36	17.44	10.74	11.26	11.61	12.13	13.22
	12H	15.07	15.54	15.96	16.43	17.52	10.81	11.28	11.70	12.17	13.26
8H	4H	14.24	14.76	15.11	15.63	16.72	10.47	10.99	11.34	11.86	12.95
	6H	14.82	15.24	15.71	16.16	17.25	11.00	11.42	11.89	12.34	13.43
	8H	15.04	15.41	15.94	16.32	17.43	11.19	11.57	12.10	12.48	13.58
	12H	15.18	15.52	16.09	16.42	17.57	11.32	11.65	12.22	12.55	13.71
12H	4H	14.20	14.66	15.09	15.56	16.65	10.49	10.95	11.37	11.84	12.93
	6H	14.79	15.17	15.70	16.08	17.18	11.05	11.43	11.95	12.34	13.44
	8H	15.02	15.36	15.93	16.26	17.41	11.27	11.60	12.17	12.50	13.66

END OF REPORT