

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: P905661

Luminaire Tested: DFN2DIP-PN2F0-060D030US835-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905661
REPORT IS A COMBINATION OF REPORTS P900999 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-060D030US835-FLLONL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

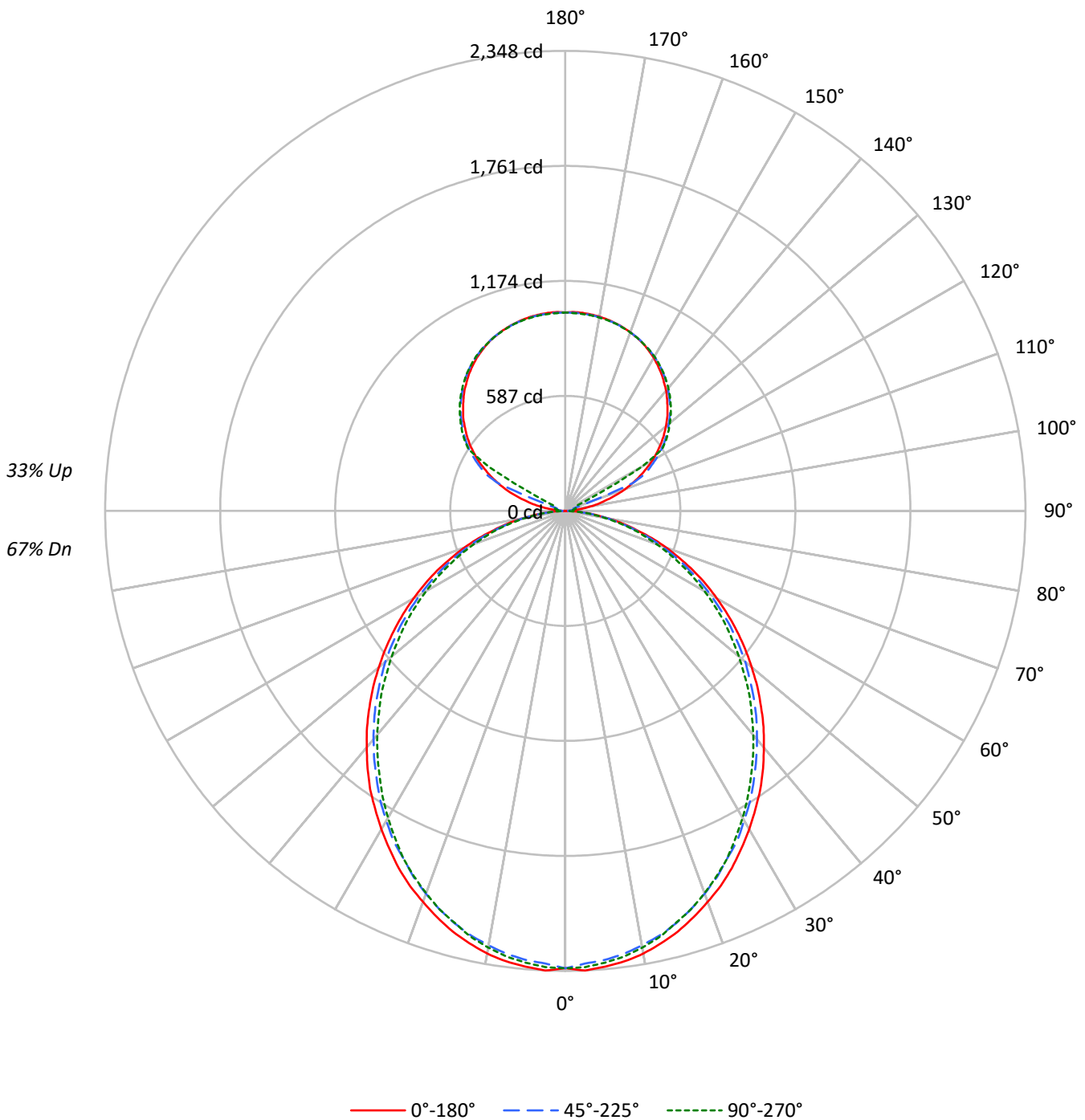
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8910.0 lumens
Efficiency: N/A
Efficacy: 106.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 83.5
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.946
Total Harmonic Distortion (THDi): 0.132
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	50	30	10	0
RCR																					
0	111	111	111	111	105	105	105	105	93	93	93	82	82	82	71	71	71	67	67	67	67
1	102	97	93	90	95	92	88	85	81	79	76	72	70	68	63	62	60	56	56	56	56
2	92	85	79	73	87	80	75	70	71	67	63	63	60	57	56	53	51	47	47	47	47
3	84	75	67	61	79	71	64	58	63	58	53	56	52	48	49	46	43	40	40	40	40
4	77	66	58	52	72	63	55	50	56	50	45	50	45	41	44	40	37	34	34	34	34
5	71	59	51	44	67	56	48	43	50	44	39	45	40	36	40	36	33	30	30	30	30
6	66	53	45	39	62	50	43	37	45	39	34	41	35	32	36	32	29	26	26	26	26
7	61	48	40	34	57	46	38	33	41	35	30	37	32	28	33	29	26	23	23	23	23
8	56	44	36	30	53	42	34	29	38	31	27	34	29	25	30	26	23	21	21	21	21
9	53	40	32	27	50	38	31	26	35	29	24	31	26	23	28	24	21	19	19	19	19
10	49	37	29	24	46	35	28	24	32	26	22	29	24	20	26	22	19	17	17	17	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5056	5056	5056
5°	5056	4975	5012
10°	5007	4897	4937
15°	4925	4806	4824
20°	4818	4683	4708
25°	4711	4539	4575
30°	4578	4403	4408
35°	4452	4245	4232
40°	4298	4086	4064
45°	4144	3925	3892
50°	3976	3755	3693
55°	3798	3560	3508
60°	3597	3330	3297
65°	3377	3089	3047
70°	3097	2796	2777
75°	2712	2445	2518
80°	2245	1997	2043
85°	1522	1262	1280

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4144 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	219.7	2.5
10°-20°	618.3	6.9
20°-30°	908.6	10.2
30°-40°	1055.3	11.8
40°-50°	1054.0	11.8
50°-60°	919.0	10.3
60°-70°	679.4	7.6
70°-80°	384.4	4.3
80°-90°	103.2	1.2
90°-100°	33.4	0.4
100°-110°	124.4	1.4
110°-120°	330.1	3.7
120°-130°	547.5	6.1
130°-140°	581.5	6.5
140°-150°	540.5	6.1
150°-160°	434.5	4.9
160°-170°	280.0	3.1
170°-180°	96.4	1.1
0°-30°	1746.6	19.6
0°-40°	2801.8	31.4
0°-60°	4774.8	53.6
0°-90°	5941.8	66.7
90°-120°	487.9	5.5
90°-150°	2157.3	24.2
90°-180°	2968.0	33.3
0°-180°	8910.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2335	2335	2335	2335	2335	
5°	2335	2326	2301	2319	2315	222
15°	2222	2209	2180	2189	2178	626
25°	2011	1994	1955	1960	1955	926
35°	1735	1713	1677	1663	1652	1084
45°	1412	1396	1363	1338	1329	1090
55°	1069	1055	1028	1001	990	955
65°	721	707	685	664	653	713
75°	377	373	361	348	352	402
85°	92	90	88	81	79	103
90°	1	9	15	18	20	8
95°	48	23	28	32	32	56
105°	223	245	45	53	56	238
115°	421	434	452	113	60	415
125°	596	605	619	624	626	531
135°	737	749	755	763	761	569
145°	855	854	867	872	868	535
155°	941	935	944	948	942	434
165°	992	988	990	995	990	280
175°	1015	1010	1011	1016	1009	97
180°	1012	1012	1012	1012	1012	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2334.6	2334.6	2334.6	2334.6	2334.6
2.5°	2348.2	2337.0	2312.2	2334.6	2330.3
5°	2334.6	2325.8	2301.0	2318.9	2314.6
7.5°	2318.9	2305.6	2280.8	2298.9	2294.4
10°	2294.4	2278.7	2251.7	2269.6	2262.9
12.5°	2260.6	2247.2	2220.3	2231.5	2227.0
15°	2222.4	2209.1	2179.8	2188.9	2177.7
17.5°	2175.3	2162.0	2132.7	2143.8	2132.7
20°	2123.6	2110.3	2078.8	2085.5	2076.7
22.5°	2072.2	2051.9	2022.6	2022.6	2018.1
25°	2011.4	1993.6	1955.4	1959.7	1955.4
27.5°	1944.0	1928.3	1899.2	1892.6	1881.4
30°	1876.9	1858.7	1825.2	1818.5	1809.4
32.5°	1804.9	1791.6	1755.6	1742.0	1733.0
35°	1735.4	1713.0	1677.0	1663.4	1652.2
37.5°	1656.8	1636.5	1600.6	1584.8	1573.6
40°	1576.0	1557.9	1522.0	1502.0	1492.9
42.5°	1497.4	1479.3	1443.6	1421.0	1407.6
45°	1412.2	1396.4	1362.6	1338.1	1329.0
47.5°	1329.0	1313.3	1277.4	1252.6	1239.2
50°	1241.4	1230.2	1198.8	1167.3	1156.1
52.5°	1156.1	1140.4	1111.3	1086.6	1070.9
55°	1068.7	1055.1	1028.2	1001.3	990.1
57.5°	981.1	969.9	940.6	913.7	904.6
60°	893.4	884.6	853.2	828.4	821.7
62.5°	808.1	792.4	770.0	747.6	738.6
65°	720.7	707.2	684.8	664.5	653.3
67.5°	630.9	619.5	599.5	583.8	574.7
70°	547.8	538.8	518.5	502.8	494.0
72.5°	462.5	453.5	442.3	426.6	419.9
75°	377.0	372.8	361.3	348.0	352.5
77.5°	300.8	291.8	287.2	280.6	273.9
80°	224.6	222.2	217.7	211.0	206.5
82.5°	152.7	152.7	150.5	141.5	141.5
85°	91.9	89.8	87.6	80.7	78.6
87.5°	40.5	36.0	31.4	24.8	22.4
90°	0.7	8.8	14.6	18.4	19.7
92.5°	18.4	15.4	17.6	19.1	19.7
95°	47.6	23.4	28.5	32.3	31.5
97.5°	85.7	25.7	37.3	39.6	40.3
100°	129.7	29.3	41.8	47.6	49.1
102.5°	178.0	176.6	43.2	51.2	53.5
105°	222.7	244.7	44.7	52.7	55.7
107.5°	274.7	293.0	46.2	54.2	57.2
110°	324.6	339.9	128.2	55.0	57.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	371.5	384.6	372.2	56.4	58.6
115°	421.2	433.7	452.0	112.8	60.1
117.5°	464.5	479.1	491.6	386.8	194.9
120°	512.8	523.8	537.0	545.8	446.9
122.5°	553.8	565.6	580.3	584.6	585.4
125°	595.6	605.1	619.1	624.2	626.4
127.5°	633.7	643.9	655.0	662.3	663.0
130°	669.6	681.4	689.4	697.4	696.8
132.5°	706.2	715.8	723.8	730.4	729.7
135°	737.0	748.8	755.3	762.7	761.2
137.5°	769.2	778.0	785.4	792.7	790.5
140°	800.7	806.6	814.6	821.2	817.6
142.5°	827.2	832.3	841.8	847.6	844.0
145°	855.0	854.2	866.7	871.8	868.1
147.5°	879.1	876.9	889.4	893.0	890.1
150°	902.6	897.5	909.2	913.5	909.9
152.5°	922.3	916.5	927.5	931.9	926.8
155°	941.4	934.9	943.6	948.0	942.2
157.5°	956.8	951.0	957.6	962.7	956.8
160°	970.0	965.6	970.0	974.4	969.2
162.5°	981.7	977.3	981.0	986.1	979.5
165°	991.9	987.6	989.8	994.9	989.8
167.5°	1000.0	995.6	997.8	1003.0	996.4
170°	1006.6	1002.2	1003.7	1008.8	1002.2
172.5°	1011.0	1006.6	1008.1	1013.2	1006.6
175°	1014.6	1009.5	1011.0	1016.1	1008.8
177.5°	1016.1	1011.0	1011.8	1016.9	1010.3
180°	1012.5	1012.5	1012.5	1012.5	1012.5



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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	14.20	15.23	15.00	16.06	17.07	13.76	14.80	14.56	15.62	16.63
	3H	15.85	16.78	16.66	17.61	18.65	15.37	16.30	16.18	17.13	18.17
	4H	16.43	17.31	17.26	18.15	19.20	15.95	16.83	16.78	17.67	18.72
	6H	16.83	17.64	17.67	18.48	19.55	16.34	17.15	17.18	18.00	19.06
	8H	16.93	17.70	17.78	18.57	19.63	16.44	17.21	17.29	18.08	19.14
	12H	16.98	17.71	17.83	18.57	19.66	16.48	17.22	17.34	18.08	19.17
4H	2H	14.67	15.55	15.50	16.39	17.44	14.32	15.20	15.15	16.04	17.09
	3H	16.53	17.26	17.37	18.13	19.20	16.13	16.86	16.97	17.73	18.80
	4H	17.23	17.90	18.09	18.77	19.86	16.82	17.49	17.68	18.36	19.45
	6H	17.74	18.32	18.61	19.21	20.31	17.32	17.90	18.19	18.79	19.89
	8H	17.88	18.42	18.76	19.31	20.42	17.46	18.00	18.34	18.89	20.00
	12H	17.96	18.44	18.85	19.35	20.47	17.52	18.01	18.42	18.92	20.03
8H	4H	17.43	17.97	18.31	18.86	19.97	17.06	17.60	17.94	18.49	19.60
	6H	18.05	18.49	18.95	19.42	20.53	17.67	18.12	18.58	19.05	20.16
	8H	18.26	18.65	19.17	19.58	20.70	17.88	18.27	18.79	19.20	20.32
	12H	18.38	18.73	19.30	19.65	20.83	17.99	18.33	18.90	19.25	20.43
12H	4H	17.42	17.91	18.32	18.82	19.94	17.06	17.55	17.96	18.46	19.57
	6H	18.07	18.47	18.99	19.39	20.52	17.71	18.11	18.63	19.03	20.16
	8H	18.31	18.66	19.23	19.57	20.75	17.94	18.29	18.86	19.20	20.38