

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: P919859

Luminaire Tested: DFN2DIP-SQ2F0-030D080US935-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919859
REPORT IS A COMBINATION OF REPORTS P901352 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-030D080US935-RLLONL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

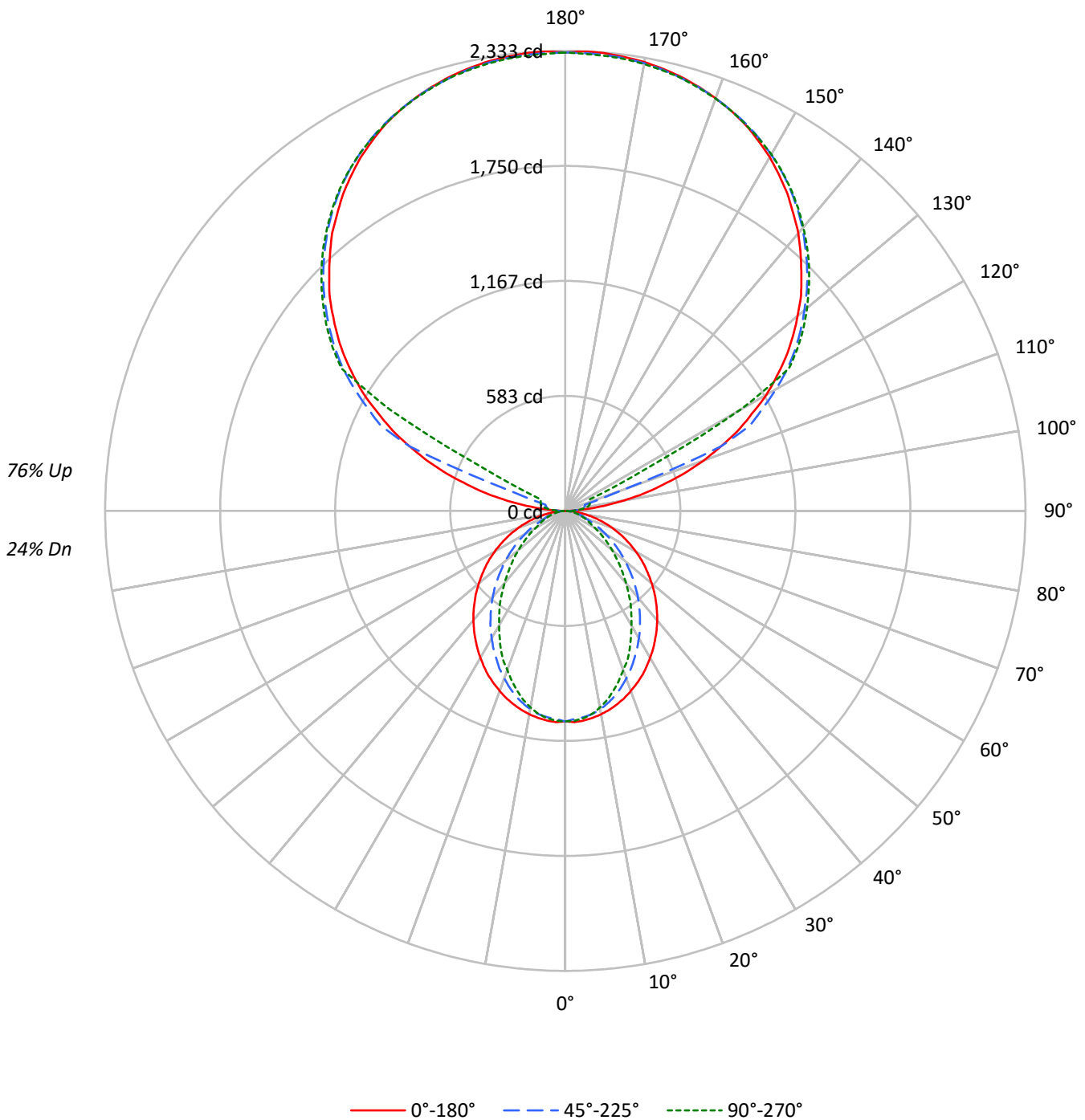
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9014.6 lumens
Efficiency: N/A
Efficacy: 102.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 88
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				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	101	101	101	101	90	90	90	90	69	69	69	50	50	50	33	33	33	24				24
1	92	88	85	81	82	79	76	73	61	59	57	44	43	42	29	28	28	21				21
2	84	77	71	67	75	69	64	60	53	50	47	39	37	35	26	25	24	18				18
3	77	68	61	56	68	61	55	50	47	43	40	35	32	30	23	22	21	15				15
4	70	60	53	47	62	54	48	43	42	38	34	31	28	26	21	19	18	14				14
5	65	54	46	40	57	48	42	37	38	33	30	28	25	23	19	17	16	12				12
6	59	48	40	35	53	43	37	32	34	29	26	25	22	20	17	15	14	11				11
7	55	43	36	30	49	39	32	28	31	26	23	23	20	17	16	14	12	9				9
8	51	39	32	27	45	35	29	25	28	23	20	21	18	16	14	13	11	9				9
9	47	36	29	24	42	32	26	22	25	21	18	19	16	14	13	11	10	8				8
10	44	33	26	21	39	29	23	19	23	19	16	18	15	13	12	11	9	7				7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2348	2348	2348
5°	2347	2305	2321
10°	2320	2255	2243
15°	2284	2175	2123
20°	2237	2068	1977
25°	2190	1948	1836
30°	2128	1826	1659
35°	2067	1696	1503
40°	2004	1561	1325
45°	1932	1412	1164
50°	1857	1262	1007
55°	1778	1103	856
60°	1686	937	702
65°	1581	769	628
70°	1453	612	563
75°	1292	530	506
80°	1061	430	428
85°	690	267	304

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2209 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	100.1	1.1
10°-20°	274.7	3.0
20°-30°	385.6	4.3
30°-40°	420.3	4.7
40°-50°	386.3	4.3
50°-60°	303.4	3.4
60°-70°	197.5	2.2
70°-80°	101.7	1.1
80°-90°	30.0	0.3
90°-100°	76.7	0.9
100°-110°	285.7	3.2
110°-120°	757.9	8.4
120°-130°	1256.9	13.9
130°-140°	1335.2	14.8
140°-150°	1240.9	13.8
150°-160°	997.6	11.1
160°-170°	642.8	7.1
170°-180°	221.3	2.5
0°-30°	760.3	8.4
0°-40°	1180.7	13.1
0°-60°	1870.4	20.7
0°-90°	2199.6	24.4
90°-120°	1120.2	12.4
90°-150°	4953.3	54.9
90°-180°	6815.0	75.6
0°-180°	9014.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1068	1068	1068	1068	1068	
5°	1068	1063	1050	1059	1056	101
15°	1015	1005	972	954	944	286
25°	922	891	827	787	773	424
35°	794	745	660	599	578	497
45°	649	584	483	414	391	501
55°	494	418	314	256	238	441
65°	333	255	168	135	132	330
75°	178	110	77	70	70	188
85°	42	21	18	18	18	48
90°	2	20	34	42	45	8
95°	109	54	66	74	72	129
105°	511	562	103	121	128	546
115°	967	996	1038	259	138	952
125°	1367	1389	1421	1433	1438	1220
135°	1692	1719	1734	1751	1748	1307
145°	1963	1961	1990	2002	1993	1228
155°	2161	2146	2167	2177	2163	996
165°	2278	2268	2272	2284	2272	643
175°	2330	2318	2321	2333	2316	222
180°	2325	2325	2325	2325	2325	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1067.6	1067.6	1067.6	1067.6	1067.6
2.5°	1072.4	1067.6	1056.9	1066.6	1064.7
5°	1067.6	1062.7	1050.2	1058.9	1055.9
7.5°	1058.9	1053.1	1039.6	1043.4	1038.5
10°	1047.2	1040.5	1021.2	1018.2	1012.5
12.5°	1032.8	1024.1	998.0	992.2	981.5
15°	1015.4	1004.7	971.9	953.6	943.9
17.5°	995.1	979.6	939.0	917.8	902.3
20°	971.9	952.5	904.2	880.2	858.8
22.5°	946.8	924.5	868.5	835.7	821.2
25°	921.7	890.7	827.0	787.4	772.8
27.5°	891.7	858.8	788.3	743.0	720.7
30°	859.9	823.1	745.8	696.6	670.5
32.5°	828.9	784.5	705.3	647.3	623.1
35°	794.2	744.8	659.9	599.0	577.7
37.5°	760.3	707.1	617.3	550.6	526.6
40°	724.6	666.7	572.9	504.3	479.2
42.5°	687.9	626.1	528.5	456.9	432.8
45°	649.3	584.4	483.1	414.4	391.2
47.5°	612.5	544.0	439.6	370.9	349.7
50°	572.0	503.3	397.1	330.4	310.1
52.5°	532.3	459.9	356.5	292.7	274.4
55°	493.6	418.3	313.9	256.1	237.7
57.5°	454.1	376.8	276.4	222.2	206.7
60°	413.5	336.2	236.7	187.4	172.0
62.5°	373.9	296.6	202.9	156.5	148.9
65°	333.3	255.0	168.1	135.3	132.3
67.5°	294.7	216.4	135.3	118.8	115.9
70°	254.1	178.7	112.0	102.4	98.5
72.5°	215.4	143.9	93.7	86.0	84.0
75°	177.7	110.1	77.3	70.5	69.6
77.5°	140.1	78.2	60.9	57.0	55.0
80°	105.3	56.1	46.3	42.5	42.5
82.5°	73.4	37.7	31.9	30.0	30.0
85°	41.5	21.2	18.3	18.3	18.3
87.5°	15.5	7.7	7.7	6.8	6.8
90°	1.6	20.1	33.6	42.1	45.4
92.5°	42.1	35.4	40.4	43.7	45.4
95°	109.3	53.7	65.5	74.1	72.3
97.5°	196.7	58.9	85.7	90.9	92.5
100°	297.8	67.3	95.9	109.3	112.6
102.5°	408.7	405.4	99.3	117.6	122.9
105°	511.3	561.9	102.6	121.1	127.9
107.5°	630.8	672.7	106.1	124.4	131.2
110°	745.3	780.4	294.5	126.2	132.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	852.9	883.0	854.5	129.4	134.7
115°	967.2	995.7	1037.8	259.1	138.0
117.5°	1066.4	1100.0	1128.8	888.0	447.5
120°	1177.5	1202.6	1233.0	1253.2	1026.1
122.5°	1271.5	1298.6	1332.3	1342.3	1344.1
125°	1367.4	1389.4	1421.3	1433.1	1438.1
127.5°	1454.9	1478.5	1503.9	1520.6	1522.2
130°	1537.4	1564.3	1582.8	1601.4	1599.7
132.5°	1621.5	1643.5	1661.9	1677.1	1675.4
135°	1692.2	1719.2	1734.1	1751.2	1747.7
137.5°	1766.2	1786.3	1803.3	1820.1	1815.1
140°	1838.4	1852.0	1870.4	1885.6	1877.1
142.5°	1899.2	1910.9	1932.7	1946.1	1937.7
145°	1963.1	1961.3	1989.9	2001.6	1993.2
147.5°	2018.4	2013.4	2041.9	2050.4	2043.8
150°	2072.3	2060.5	2087.5	2097.5	2089.1
152.5°	2117.7	2104.3	2129.4	2139.7	2127.9
155°	2161.4	2146.5	2166.6	2176.6	2163.3
157.5°	2196.7	2183.4	2198.6	2210.4	2196.7
160°	2227.1	2217.0	2227.1	2237.1	2225.3
162.5°	2253.9	2243.9	2252.3	2264.1	2248.9
165°	2277.5	2267.5	2272.5	2284.2	2272.5
167.5°	2296.0	2285.9	2291.0	2302.8	2287.7
170°	2311.3	2301.0	2304.5	2316.3	2301.0
172.5°	2321.3	2311.3	2314.6	2326.4	2311.3
175°	2329.6	2317.8	2321.3	2333.0	2316.3
177.5°	2333.0	2321.3	2323.0	2334.8	2319.6
180°	2324.6	2324.6	2324.6	2324.6	2324.6



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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	6.93	7.59	8.08	8.72	10.32	2.89	3.55	4.04	4.68	6.28
	3H	8.57	9.16	9.73	10.31	11.92	4.05	4.63	5.21	5.78	7.39
	4H	9.16	9.72	10.33	10.87	12.48	4.47	5.03	5.64	6.18	7.80
	6H	9.56	10.07	10.73	11.22	12.85	4.77	5.28	5.95	6.43	8.06
	8H	9.67	10.16	10.85	11.32	12.94	4.85	5.34	6.03	6.50	8.12
	12H	9.72	10.18	10.90	11.34	12.98	4.88	5.34	6.06	6.50	8.14
4H	2H	6.92	7.48	8.10	8.63	10.24	3.45	4.01	4.63	5.16	6.77
	3H	8.71	9.18	9.89	10.35	11.98	4.76	5.23	5.95	6.40	8.03
	4H	9.38	9.81	10.56	10.97	12.62	5.29	5.72	6.47	6.88	8.53
	6H	9.87	10.23	11.06	11.42	13.05	5.68	6.05	6.87	7.23	8.87
	8H	10.03	10.37	11.21	11.54	13.20	5.80	6.14	6.98	7.31	8.96
	12H	10.10	10.41	11.31	11.60	13.26	5.84	6.15	7.04	7.34	8.99
8H	4H	9.33	9.67	10.52	10.85	12.50	5.55	5.89	6.73	7.06	8.71
	6H	9.87	10.15	11.08	11.37	13.02	6.03	6.31	7.24	7.53	9.18
	8H	10.07	10.32	11.28	11.51	13.18	6.21	6.45	7.42	7.65	9.32
	12H	10.19	10.40	11.40	11.60	13.30	6.31	6.52	7.52	7.71	9.41
12H	4H	9.27	9.58	10.48	10.77	12.43	5.54	5.85	6.74	7.03	8.69
	6H	9.84	10.09	11.05	11.28	12.95	6.08	6.32	7.29	7.51	9.19
	8H	10.04	10.26	11.26	11.45	13.15	6.26	6.48	7.48	7.67	9.37