

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: P914403

Luminaire Tested: DFN2DIP-SQ2F0-030D080US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914403
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-SQ2F0-030D080US927-RLLONL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

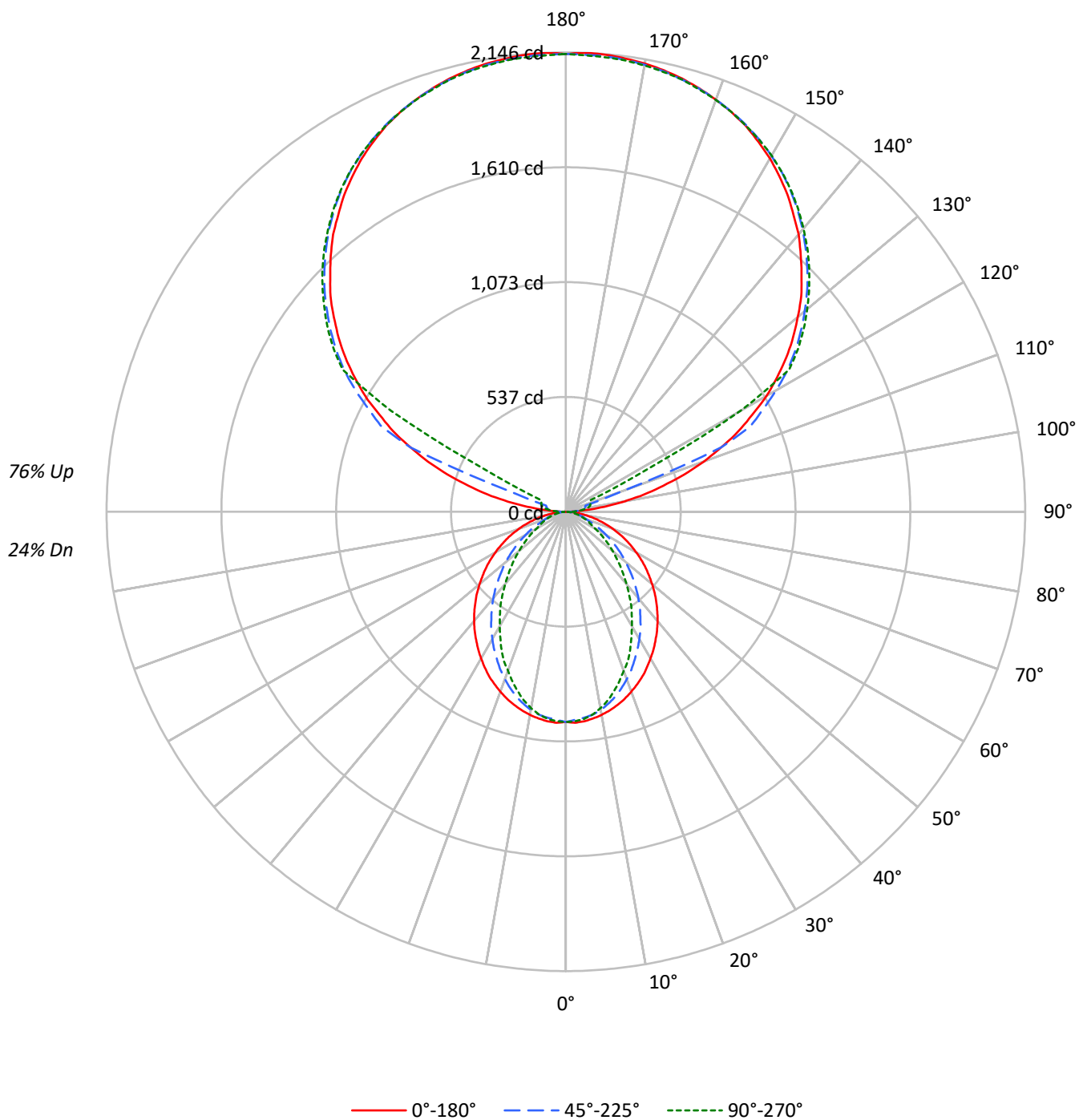
Lumens per Lamp: N/A
Luminaire Lumens: 8294.1 lumens
Efficiency: N/A
Efficacy: 94.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Indirect

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2160	2160	2160
5°	2159	2121	2136
10°	2134	2075	2064
15°	2101	2001	1953
20°	2059	1902	1819
25°	2015	1793	1690
30°	1958	1680	1527
35°	1901	1560	1383
40°	1844	1436	1219
45°	1777	1299	1071
50°	1708	1162	926
55°	1636	1015	788
60°	1551	862	646
65°	1455	707	578
70°	1337	564	518
75°	1189	488	465
80°	977	396	394
85°	635	246	281

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2029 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	92.1	1.1
10°-20°	252.7	3.0
20°-30°	354.8	4.3
30°-40°	386.8	4.7
40°-50°	355.5	4.3
50°-60°	279.2	3.4
60°-70°	181.7	2.2
70°-80°	93.5	1.1
80°-90°	27.7	0.3
90°-100°	70.5	0.9
100°-110°	262.9	3.2
110°-120°	697.3	8.4
120°-130°	1156.5	13.9
130°-140°	1228.4	14.8
140°-150°	1141.7	13.8
150°-160°	917.9	11.1
160°-170°	591.5	7.1
170°-180°	203.6	2.5
0°-30°	699.6	8.4
0°-40°	1086.3	13.1
0°-60°	1720.9	20.7
0°-90°	2023.8	24.4
90°-120°	1030.7	12.4
90°-150°	4557.3	54.9
90°-180°	6270.0	75.6
0°-180°	8294.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	982	982	982	982	982	
5°	982	978	966	974	972	93
15°	934	924	894	877	868	263
25°	848	820	761	724	711	390
35°	731	685	607	551	532	457
45°	597	538	444	381	360	461
55°	454	385	289	236	219	406
65°	307	235	155	124	122	304
75°	164	101	71	65	64	173
85°	38	20	17	17	17	44
90°	2	18	31	39	42	8
95°	100	49	60	68	66	119
105°	470	517	94	111	118	503
115°	890	916	955	238	127	876
125°	1258	1278	1308	1319	1323	1122
135°	1557	1582	1596	1611	1608	1203
145°	1806	1804	1831	1842	1834	1130
155°	1989	1975	1993	2003	1990	916
165°	2096	2086	2091	2102	2091	592
175°	2143	2133	2136	2146	2131	204
180°	2139	2139	2139	2139	2139	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	982.2	982.2	982.2	982.2	982.2
2.5°	986.7	982.2	972.4	981.4	979.6
5°	982.2	977.8	966.2	974.2	971.5
7.5°	974.2	968.9	956.5	960.0	955.5
10°	963.5	957.4	939.6	936.8	931.6
12.5°	950.2	942.2	918.2	912.9	903.1
15°	934.2	924.4	894.2	877.3	868.5
17.5°	915.5	901.3	864.0	844.5	830.2
20°	894.2	876.4	831.9	809.8	790.2
22.5°	871.2	850.6	799.1	768.9	755.6
25°	848.0	819.5	760.9	724.4	711.1
27.5°	820.5	790.2	725.3	683.6	663.1
30°	791.2	757.3	686.2	641.0	616.9
32.5°	762.6	721.8	649.0	595.6	573.3
35°	730.7	685.3	607.1	551.1	531.6
37.5°	699.6	650.6	568.0	506.6	484.5
40°	666.7	613.4	527.1	464.0	440.9
42.5°	632.9	576.1	486.2	420.4	398.2
45°	597.4	537.7	444.5	381.3	360.0
47.5°	563.6	500.5	404.5	341.3	321.8
50°	526.2	463.1	365.4	304.0	285.3
52.5°	489.7	423.1	328.0	269.3	252.5
55°	454.2	384.8	288.8	235.6	218.7
57.5°	417.8	346.7	254.3	204.5	190.2
60°	380.4	309.3	217.8	172.5	158.3
62.5°	344.0	272.9	186.6	144.0	137.0
65°	306.7	234.6	154.6	124.5	121.8
67.5°	271.2	199.1	124.5	109.3	106.6
70°	233.8	164.5	103.1	94.2	90.6
72.5°	198.2	132.4	86.2	79.1	77.3
75°	163.5	101.3	71.1	64.9	64.0
77.5°	128.9	71.9	56.0	52.4	50.6
80°	96.9	51.6	42.6	39.1	39.1
82.5°	67.5	34.7	29.3	27.6	27.6
85°	38.2	19.5	16.9	16.9	16.9
87.5°	14.3	7.1	7.1	6.3	6.3
90°	1.5	18.5	30.9	38.7	41.7
92.5°	38.7	32.6	37.2	40.2	41.7
95°	100.5	49.4	60.3	68.2	66.5
97.5°	181.0	54.2	78.8	83.7	85.1
100°	274.0	61.9	88.2	100.5	103.6
102.5°	376.0	373.0	91.3	108.2	113.0
105°	470.5	517.0	94.4	111.4	117.6
107.5°	580.4	618.9	97.6	114.5	120.7
110°	685.7	718.0	270.9	116.1	122.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	784.7	812.5	786.2	119.1	123.9
115°	889.9	916.2	954.9	238.4	127.0
117.5°	981.2	1012.1	1038.5	817.1	411.7
120°	1083.4	1106.5	1134.5	1153.0	944.0
122.5°	1169.9	1194.8	1225.8	1235.0	1236.7
125°	1258.1	1278.3	1307.7	1318.6	1323.2
127.5°	1338.6	1360.3	1383.7	1399.1	1400.6
130°	1414.5	1439.3	1456.3	1473.4	1471.9
132.5°	1491.9	1512.1	1529.1	1543.0	1541.5
135°	1557.0	1581.7	1595.5	1611.2	1608.0
137.5°	1625.0	1643.5	1659.1	1674.6	1670.0
140°	1691.5	1704.0	1720.9	1734.9	1727.1
142.5°	1747.4	1758.2	1778.2	1790.6	1782.8
145°	1806.2	1804.5	1830.8	1841.7	1833.9
147.5°	1857.1	1852.5	1878.7	1886.5	1880.4
150°	1906.7	1895.8	1920.6	1929.8	1922.1
152.5°	1948.4	1936.1	1959.2	1968.6	1957.8
155°	1988.7	1974.9	1993.4	2002.6	1990.4
157.5°	2021.2	2008.9	2022.8	2033.7	2021.2
160°	2049.1	2039.8	2049.1	2058.3	2047.5
162.5°	2073.8	2064.6	2072.3	2083.1	2069.2
165°	2095.5	2086.3	2090.9	2101.7	2090.9
167.5°	2112.5	2103.2	2107.9	2118.8	2104.8
170°	2126.5	2117.1	2120.3	2131.1	2117.1
172.5°	2135.7	2126.5	2129.6	2140.5	2126.5
175°	2143.4	2132.6	2135.7	2146.5	2131.1
177.5°	2146.5	2135.7	2137.3	2148.2	2134.2
180°	2138.8	2138.8	2138.8	2138.8	2138.8

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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	6.64	7.30	7.79	8.43	10.03	2.60	3.26	3.75	4.40	5.99
	3H	8.28	8.87	9.45	10.02	11.63	3.76	4.34	4.92	5.49	7.10
	4H	8.87	9.43	10.04	10.58	12.19	4.19	4.74	5.36	5.89	7.51
	6H	9.27	9.78	10.45	10.93	12.56	4.48	4.99	5.66	6.14	7.77
	8H	9.38	9.87	10.56	11.03	12.65	4.56	5.05	5.74	6.21	7.83
	12H	9.43	9.89	10.61	11.05	12.69	4.59	5.05	5.77	6.21	7.85
4H	2H	6.63	7.19	7.81	8.34	9.95	3.16	3.72	4.34	4.87	6.48
	3H	8.42	8.89	9.60	10.06	11.69	4.48	4.94	5.66	6.11	7.74
	4H	9.09	9.52	10.28	10.68	12.33	5.00	5.43	6.18	6.59	8.24
	6H	9.58	9.94	10.77	11.13	12.76	5.39	5.76	6.58	6.94	8.58
	8H	9.74	10.08	10.93	11.25	12.91	5.51	5.85	6.69	7.02	8.67
	12H	9.82	10.13	11.02	11.31	12.97	5.55	5.86	6.75	7.05	8.71
8H	4H	9.04	9.38	10.23	10.56	12.21	5.26	5.60	6.44	6.77	8.43
	6H	9.58	9.86	10.79	11.08	12.73	5.74	6.02	6.95	7.24	8.89
	8H	9.78	10.03	10.99	11.22	12.89	5.92	6.16	7.13	7.36	9.03
	12H	9.90	10.11	11.11	11.31	13.01	6.02	6.23	7.23	7.42	9.13
12H	4H	8.99	9.29	10.19	10.48	12.14	5.25	5.56	6.45	6.74	8.40
	6H	9.55	9.80	10.76	10.99	12.66	5.79	6.03	7.00	7.23	8.90
	8H	9.75	9.97	10.97	11.16	12.86	5.97	6.19	7.19	7.38	9.08