

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: P914451

Luminaire Tested: DFN2DIP-SQ2F0-050D080US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914451
REPORT IS A COMBINATION OF REPORTS P901356 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-050D080US927-RLLONL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

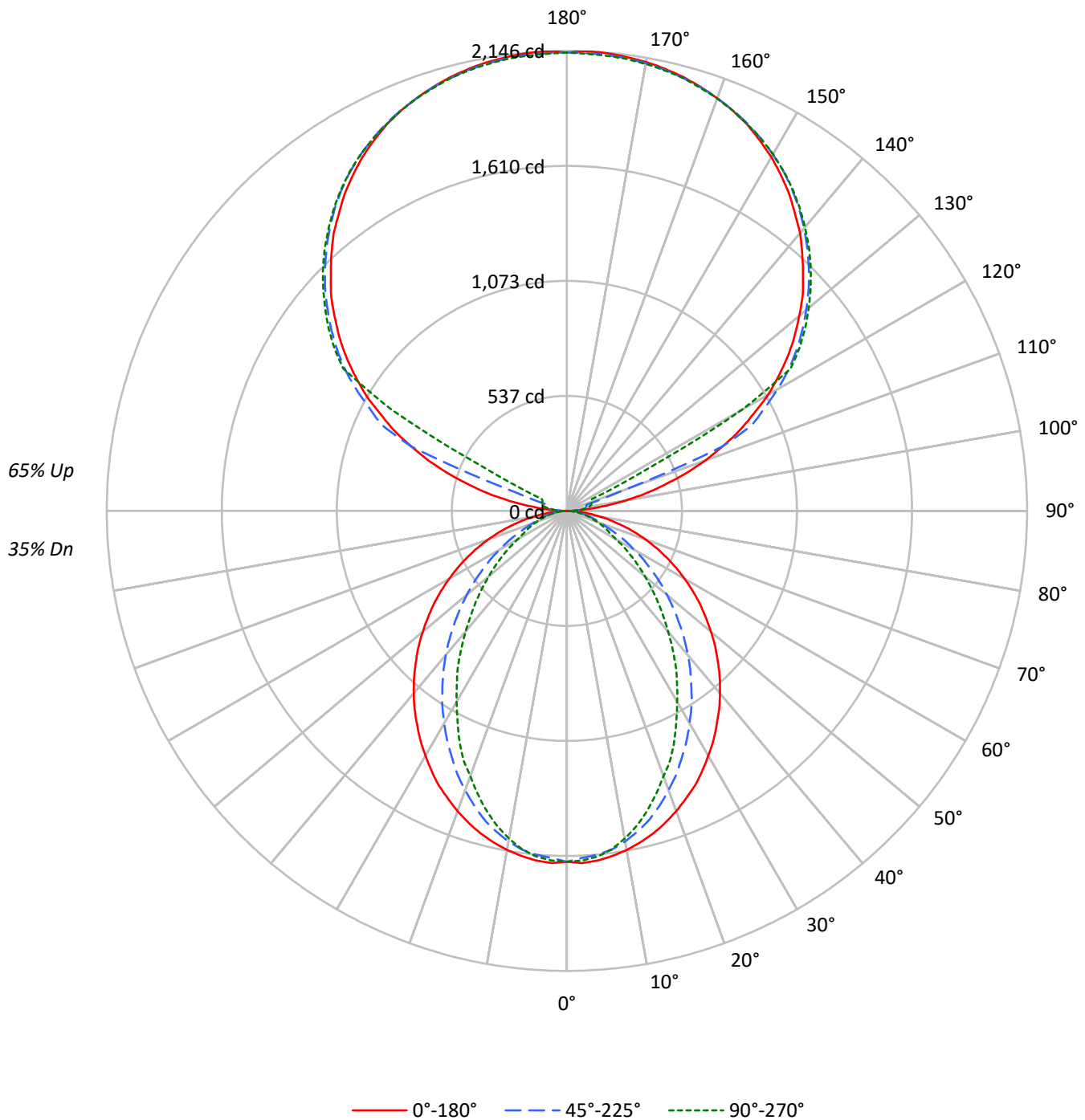
Lumens per Lamp: N/A
Luminaire Lumens: 9640.8 lumens
Efficiency: N/A
Efficacy: 88.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 109.2
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	104	104	104	104	94	94	94	94	75	75	75	58	58	58	42	42	42
1	95	91	87	84	86	82	79	76	66	64	62	51	50	49	38	37	36
2	87	80	74	69	78	72	67	63	58	55	52	46	43	41	34	32	31
3	79	70	63	58	71	64	58	53	52	47	44	41	38	35	30	28	27
4	72	62	55	49	65	57	50	45	46	41	38	36	33	30	27	25	23
5	67	56	48	42	60	51	44	39	41	36	33	33	29	27	25	22	21
6	61	50	42	37	55	45	39	34	37	32	29	30	26	23	22	20	18
7	57	45	37	32	51	41	34	30	34	29	25	27	23	21	21	18	16
8	53	41	33	28	48	37	31	26	31	26	22	25	21	19	19	17	15
9	49	37	30	25	44	34	28	23	28	23	20	23	19	17	18	15	13
10	46	34	27	23	41	31	25	21	26	21	18	21	18	15	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3600	3600	3600
5°	3599	3535	3560
10°	3557	3458	3439
15°	3502	3336	3256
20°	3431	3171	3032
25°	3358	2988	2816
30°	3263	2801	2544
35°	3169	2600	2305
40°	3073	2393	2032
45°	2962	2165	1785
50°	2847	1936	1544
55°	2726	1691	1313
60°	2586	1437	1075
65°	2424	1180	963
70°	2229	940	864
75°	1982	813	776
80°	1627	661	657
85°	1060	410	467

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2962 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.4	1.6
10°-20°	421.2	4.4
20°-30°	591.3	6.1
30°-40°	644.6	6.7
40°-50°	592.4	6.1
50°-60°	465.3	4.8
60°-70°	302.9	3.1
70°-80°	155.9	1.6
80°-90°	43.6	0.5
90°-100°	70.5	0.7
100°-110°	262.9	2.7
110°-120°	697.3	7.2
120°-130°	1156.5	12.0
130°-140°	1228.4	12.7
140°-150°	1141.7	11.8
150°-160°	917.9	9.5
160°-170°	591.5	6.1
170°-180°	203.6	2.1
0°-30°	1165.9	12.1
0°-40°	1810.5	18.8
0°-60°	2868.2	29.8
0°-90°	3370.5	35.0
90°-120°	1030.7	10.7
90°-150°	4557.3	47.3
90°-180°	6270.0	65.0
0°-180°	9640.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1637	1637	1637	1637	1637	
5°	1637	1630	1610	1624	1619	155
15°	1557	1541	1490	1462	1448	439
25°	1413	1366	1268	1207	1185	650
35°	1218	1142	1012	918	886	762
45°	996	896	741	636	600	769
55°	757	641	481	393	364	676
65°	511	391	258	208	203	507
75°	273	169	118	108	107	288
85°	64	33	28	28	28	73
90°	2	18	31	39	42	9
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°	1637.0	1637.0	1637.0	1637.0	1637.0
2.5°	1644.4	1637.0	1620.7	1635.6	1632.6
5°	1637.0	1629.7	1610.3	1623.7	1619.3
7.5°	1623.7	1614.9	1594.1	1600.0	1592.5
10°	1605.9	1595.5	1566.0	1561.5	1552.6
12.5°	1583.7	1570.4	1530.3	1521.5	1505.1
15°	1557.0	1540.7	1490.4	1462.3	1447.5
17.5°	1525.9	1502.2	1439.9	1407.4	1383.6
20°	1490.4	1460.7	1386.6	1349.7	1317.0
22.5°	1451.9	1417.8	1331.8	1281.5	1259.3
25°	1413.3	1365.9	1268.1	1207.4	1185.1
27.5°	1367.5	1317.0	1208.9	1139.2	1105.2
30°	1318.6	1262.2	1143.7	1068.2	1028.1
32.5°	1271.1	1202.9	1081.6	992.6	955.5
35°	1217.8	1142.2	1011.9	918.5	885.9
37.5°	1165.9	1084.4	946.7	844.4	807.5
40°	1111.1	1022.3	878.4	773.3	734.8
42.5°	1054.9	960.0	810.4	700.7	663.8
45°	995.6	896.3	740.8	635.5	599.9
47.5°	939.3	834.2	674.1	568.9	536.3
50°	877.1	771.9	608.9	506.6	475.6
52.5°	816.3	705.1	546.7	448.9	420.8
55°	757.0	641.4	481.4	392.6	364.5
57.5°	696.3	577.8	423.7	340.8	317.0
60°	634.1	515.6	362.9	287.5	263.7
62.5°	573.4	454.9	311.1	240.0	228.2
65°	511.1	391.1	257.8	207.5	203.0
67.5°	451.9	331.8	207.5	182.2	177.8
70°	389.7	274.1	171.8	157.0	151.1
72.5°	330.4	220.7	143.7	131.9	128.9
75°	272.6	168.8	118.5	108.1	106.7
77.5°	214.8	119.9	93.4	87.4	84.4
80°	161.4	86.0	71.1	65.2	65.2
82.5°	112.6	57.8	48.9	45.9	45.9
85°	63.7	32.6	28.1	28.1	28.1
87.5°	23.8	11.8	11.8	10.4	10.4
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	9.89	10.61	10.97	11.69	13.16	5.85	6.57	6.93	7.65	9.12
	3H	11.54	12.18	12.63	13.27	14.76	7.01	7.66	8.10	8.74	10.24
	4H	12.13	12.74	13.23	13.83	15.33	7.45	8.06	8.55	9.14	10.64
	6H	12.53	13.09	13.64	14.18	15.69	7.74	8.31	8.85	9.40	10.91
	8H	12.65	13.18	13.76	14.29	15.79	7.82	8.36	8.94	9.46	10.97
	12H	12.70	13.20	13.81	14.30	15.83	7.86	8.36	8.97	9.46	10.99
4H	2H	9.89	10.50	11.00	11.59	13.09	6.42	7.03	7.53	8.12	9.62
	3H	11.69	12.20	12.80	13.31	14.82	7.74	8.25	8.86	9.36	10.87
	4H	12.36	12.83	13.48	13.93	15.46	8.27	8.74	9.39	9.84	11.37
	6H	12.85	13.25	13.98	14.38	15.90	8.66	9.06	9.79	10.19	11.71
	8H	13.01	13.38	14.14	14.50	16.04	8.78	9.15	9.90	10.27	11.81
	12H	13.09	13.43	14.23	14.56	16.10	8.83	9.17	9.97	10.30	11.84
8H	4H	12.31	12.69	13.44	13.81	15.35	8.53	8.90	9.66	10.02	11.56
	6H	12.86	13.16	14.00	14.32	15.86	9.02	9.33	10.17	10.49	12.02
	8H	13.06	13.33	14.21	14.47	16.02	9.20	9.46	10.35	10.61	12.16
	12H	13.18	13.41	14.33	14.55	16.14	9.30	9.53	10.45	10.67	12.26
12H	4H	12.26	12.60	13.40	13.73	15.27	8.53	8.86	9.67	10.00	11.54
	6H	12.83	13.10	13.98	14.24	15.79	9.06	9.33	10.22	10.47	12.03
	8H	13.03	13.27	14.19	14.40	16.00	9.25	9.49	10.41	10.63	12.22