

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: P922607

Luminaire Tested: DFN2DIP-SQ2F0-040D070US940-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922607
REPORT IS A COMBINATION OF REPORTS P901342 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-040D070US940-RLLONL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

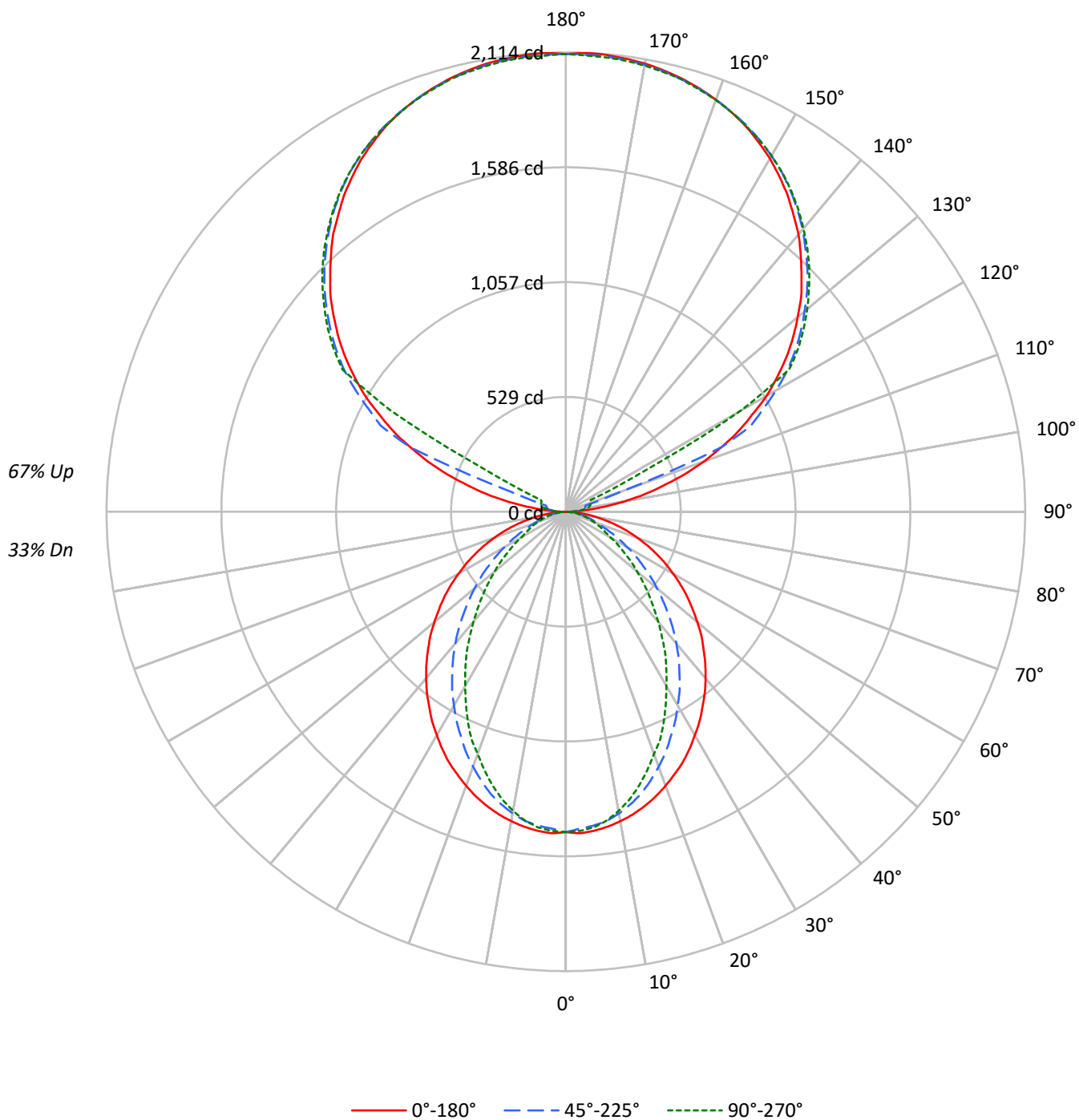
Lumens per Lamp: N/A
Luminaire Lumens: 9211.4 lumens
Efficiency: N/A
Efficacy: 104.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 88.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
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
RCR																	
0	103	103	103	103	93	93	93	93	74	74	74		56	56	56		40
1	94	90	87	83	85	81	78	76	65	63	61		50	49	48		36
2	86	79	73	68	77	72	67	62	57	54	51		44	42	40		32
3	79	70	63	57	71	63	57	53	51	47	43		39	37	34		29
4	72	62	54	49	65	56	50	45	45	41	37		35	32	30		26
5	66	55	47	42	59	50	43	38	41	36	32		32	28	26		24
6	61	49	42	36	55	45	38	33	37	32	28		29	25	23		21
7	56	45	37	32	51	41	34	29	33	28	25		26	23	20		20
8	52	41	33	28	47	37	31	26	30	25	22		24	21	18		18
9	49	37	30	25	44	34	27	23	28	23	20		22	19	16		17
10	45	34	27	22	41	31	25	21	26	21	18		20	17	15		16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3242	3242	3242
5°	3241	3183	3206
10°	3204	3114	3097
15°	3154	3004	2932
20°	3090	2856	2730
25°	3024	2690	2536
30°	2938	2522	2291
35°	2854	2341	2076
40°	2767	2155	1830
45°	2667	1950	1608
50°	2564	1743	1390
55°	2455	1523	1182
60°	2329	1294	969
65°	2183	1062	867
70°	2007	846	778
75°	1784	732	699
80°	1465	594	593
85°	953	369	421

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2667 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.2	1.5
10°-20°	379.3	4.1
20°-30°	532.5	5.8
30°-40°	580.5	6.3
40°-50°	533.5	5.8
50°-60°	419.0	4.5
60°-70°	272.7	3.0
70°-80°	140.4	1.5
80°-90°	39.5	0.4
90°-100°	69.5	0.8
100°-110°	259.0	2.8
110°-120°	686.8	7.5
120°-130°	1139.1	12.4
130°-140°	1209.9	13.1
140°-150°	1124.5	12.2
150°-160°	904.1	9.8
160°-170°	582.6	6.3
170°-180°	200.5	2.2
0°-30°	1049.9	11.4
0°-40°	1630.4	17.7
0°-60°	2582.9	28.0
0°-90°	3035.5	33.0
90°-120°	1015.2	11.0
90°-150°	4488.7	48.7
90°-180°	6176.0	67.0
0°-180°	9211.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1474	1474	1474	1474	1474	
5°	1474	1468	1450	1462	1458	140
15°	1402	1387	1342	1317	1304	395
25°	1273	1230	1142	1087	1067	585
35°	1097	1029	911	827	798	686
45°	896	807	667	572	540	692
55°	682	578	434	354	328	609
65°	460	352	232	187	183	456
75°	245	152	107	97	96	260
85°	57	29	25	25	25	66
90°	1	18	30	38	41	9
95°	99	49	59	67	66	117
105°	463	509	93	110	116	495
115°	876	902	940	235	125	863
125°	1239	1259	1288	1299	1303	1105
135°	1534	1558	1572	1587	1584	1185
145°	1779	1777	1803	1814	1806	1113
155°	1959	1945	1963	1972	1960	903
165°	2064	2055	2059	2070	2059	583
175°	2111	2100	2104	2114	2099	201
180°	2107	2107	2107	2107	2107	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1474.2	1474.2	1474.2	1474.2	1474.2
2.5°	1480.9	1474.2	1459.5	1472.9	1470.2
5°	1474.2	1467.5	1450.1	1462.1	1458.2
7.5°	1462.1	1454.2	1435.6	1440.7	1434.1
10°	1446.2	1436.8	1410.2	1406.0	1398.2
12.5°	1426.2	1414.2	1378.0	1370.1	1355.4
15°	1402.1	1387.4	1342.1	1316.8	1303.5
17.5°	1374.1	1352.7	1296.6	1267.4	1246.0
20°	1342.1	1315.4	1248.7	1215.4	1186.0
22.5°	1307.4	1276.8	1199.3	1154.0	1134.1
25°	1272.7	1230.0	1141.9	1087.4	1067.2
27.5°	1231.5	1186.0	1088.6	1025.9	995.1
30°	1187.4	1136.6	1029.8	961.9	925.9
32.5°	1144.7	1083.2	973.9	893.9	860.4
35°	1096.7	1028.6	911.2	827.2	797.7
37.5°	1050.0	976.5	852.5	760.4	727.1
40°	1000.6	920.6	791.1	696.4	661.7
42.5°	949.8	864.5	729.8	631.0	597.7
45°	896.5	807.1	667.1	572.3	540.3
47.5°	845.9	751.2	607.1	512.3	483.0
50°	789.8	695.1	548.3	456.2	428.3
52.5°	735.0	635.0	492.3	404.2	378.9
55°	681.7	577.6	433.5	353.6	328.2
57.5°	627.1	520.3	381.6	306.8	285.5
60°	571.0	464.2	326.8	258.9	237.6
62.5°	516.4	409.7	280.1	216.2	205.5
65°	460.3	352.1	232.1	186.8	182.7
67.5°	407.0	298.8	186.8	164.1	160.1
70°	350.9	246.8	154.7	141.4	136.0
72.5°	297.6	198.8	129.4	118.8	116.1
75°	245.4	152.0	106.7	97.4	96.1
77.5°	193.5	108.0	84.1	78.7	76.0
80°	145.3	77.4	63.9	58.8	58.8
82.5°	101.4	52.1	44.1	41.3	41.3
85°	57.3	29.3	25.3	25.3	25.3
87.5°	21.4	10.6	10.6	9.4	9.4
90°	1.4	18.3	30.4	38.2	41.1
92.5°	38.2	32.0	36.6	39.7	41.1
95°	99.0	48.7	59.4	67.1	65.5
97.5°	178.3	53.4	77.7	82.4	83.8
100°	269.9	61.0	86.9	99.0	102.1
102.5°	370.3	367.5	90.0	106.6	111.3
105°	463.4	509.2	93.0	109.7	115.8
107.5°	571.6	609.7	96.1	112.8	119.0
110°	675.4	707.2	266.8	114.4	120.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	772.9	800.2	774.4	117.3	122.0
115°	876.5	902.3	940.5	234.8	125.1
117.5°	966.4	996.8	1022.9	804.8	405.5
120°	1067.0	1089.8	1117.4	1135.7	929.9
122.5°	1152.3	1176.7	1207.4	1216.4	1218.0
125°	1239.2	1259.1	1288.1	1298.8	1303.2
127.5°	1318.5	1339.8	1362.8	1378.0	1379.5
130°	1393.2	1417.6	1434.3	1451.2	1449.7
132.5°	1469.4	1489.3	1506.0	1519.7	1518.3
135°	1533.5	1557.9	1571.6	1586.9	1583.9
137.5°	1600.4	1618.8	1634.1	1649.4	1644.8
140°	1666.0	1678.3	1695.0	1708.7	1701.1
142.5°	1721.0	1731.7	1751.4	1763.5	1756.0
145°	1779.0	1777.4	1803.2	1813.9	1806.3
147.5°	1829.1	1824.6	1850.5	1858.1	1852.1
150°	1877.9	1867.3	1891.8	1900.8	1893.2
152.5°	1919.0	1906.9	1929.8	1938.9	1928.3
155°	1958.7	1945.1	1963.4	1972.5	1960.3
157.5°	1990.7	1978.6	1992.3	2003.0	1990.7
160°	2018.3	2009.0	2018.3	2027.3	2016.6
162.5°	2042.6	2033.5	2041.0	2051.7	2038.0
165°	2063.9	2054.9	2059.3	2070.0	2059.3
167.5°	2080.7	2071.4	2076.2	2086.9	2073.1
170°	2094.4	2085.3	2088.3	2099.0	2085.3
172.5°	2103.5	2094.4	2097.6	2108.2	2094.4
175°	2111.1	2100.4	2103.5	2114.2	2099.0
177.5°	2114.2	2103.5	2105.1	2115.9	2102.0
180°	2106.6	2106.6	2106.6	2106.6	2106.6

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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	9.28	9.98	10.37	11.07	12.57	5.24	5.94	6.33	7.03	8.53
	3H	10.93	11.56	12.03	12.66	14.17	6.40	7.03	7.50	8.13	9.64
	4H	11.51	12.12	12.63	13.22	14.74	6.83	7.43	7.94	8.53	10.05
	6H	11.91	12.47	13.04	13.57	15.10	7.13	7.68	8.25	8.78	10.32
	8H	12.03	12.55	13.16	13.67	15.20	7.21	7.73	8.33	8.85	10.38
	12H	12.08	12.58	13.21	13.69	15.24	7.24	7.74	8.37	8.85	10.40
4H	2H	9.27	9.88	10.40	10.97	12.50	5.81	6.41	6.93	7.51	9.03
	3H	11.07	11.57	12.20	12.70	14.23	7.12	7.62	8.25	8.75	10.28
	4H	11.74	12.20	12.87	13.32	14.87	7.65	8.11	8.78	9.23	10.78
	6H	12.23	12.62	13.37	13.76	15.31	8.05	8.44	9.18	9.58	11.12
	8H	12.39	12.76	13.53	13.89	15.45	8.16	8.53	9.30	9.66	11.22
	12H	12.47	12.80	13.63	13.95	15.51	8.21	8.54	9.36	9.68	11.25
8H	4H	11.70	12.06	12.83	13.19	14.75	7.91	8.28	9.05	9.41	10.97
	6H	12.24	12.54	13.39	13.71	15.27	8.40	8.70	9.56	9.88	11.43
	8H	12.44	12.70	13.60	13.86	15.43	8.58	8.84	9.74	9.99	11.57
	12H	12.56	12.79	13.73	13.94	15.55	8.68	8.91	9.84	10.06	11.67
12H	4H	11.64	11.97	12.80	13.12	14.68	7.91	8.24	9.06	9.38	10.95
	6H	12.21	12.47	13.37	13.63	15.20	8.45	8.71	9.61	9.86	11.44
	8H	12.41	12.64	13.58	13.79	15.40	8.63	8.87	9.80	10.01	11.63

END OF REPORT