

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: P914491

Luminaire Tested: DFN2DIP-SQ2F0-070D060US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914491
REPORT IS A COMBINATION OF REPORTS P901336 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-070D060US927-RLLONL
Description: 2 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

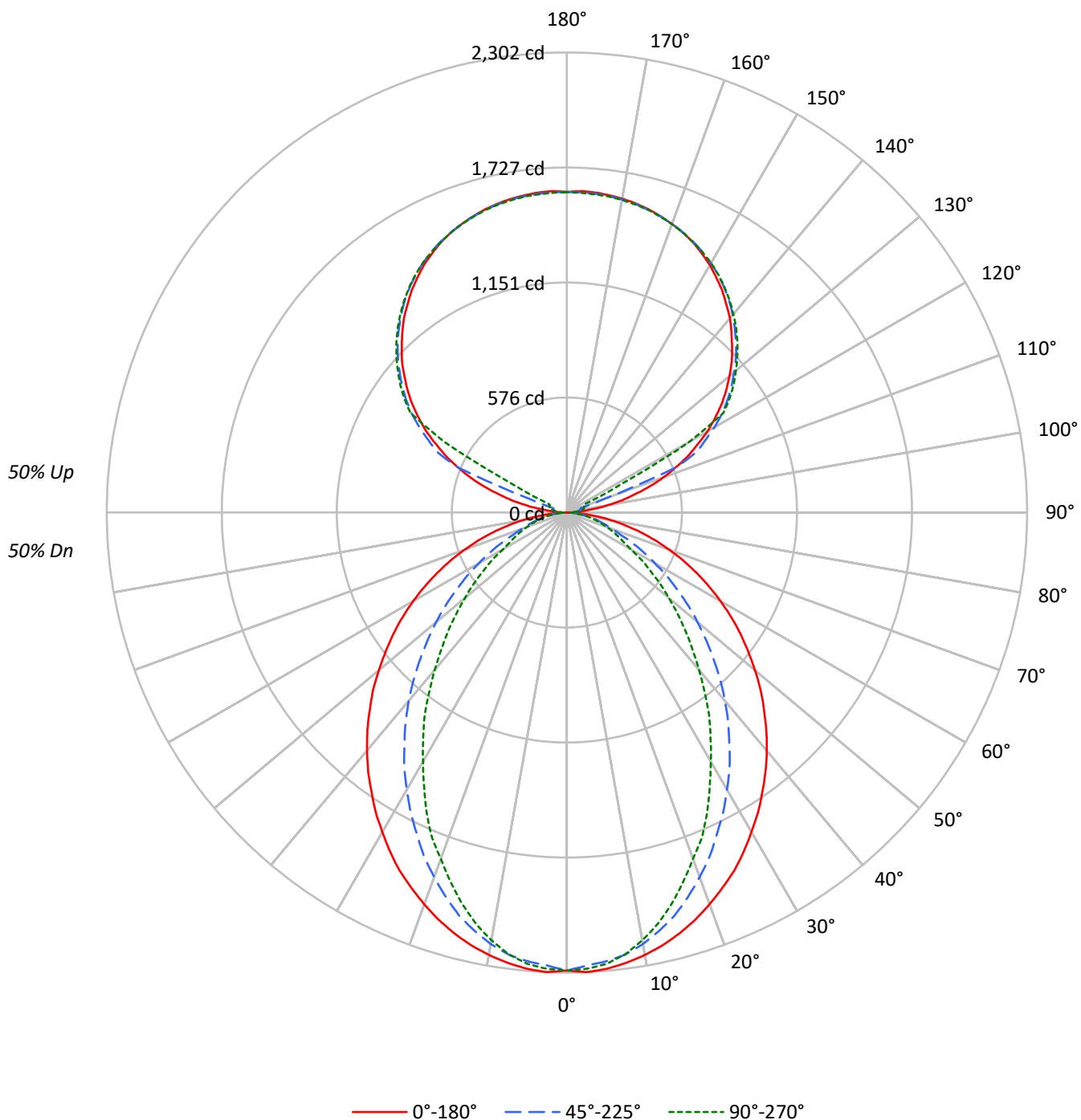
Lumens per Lamp: N/A
Luminaire Lumens: 9419.0 lumens
Efficiency: N/A
Efficacy: 82.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 113.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
Total Harmonic Distortion (THDi): 0.049
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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56
1	98	94	90	87	91	87	84	81	74	72	69	62	60	59	50	49	48
2	90	83	77	72	83	77	72	67	65	62	58	55	52	50	45	43	41
3	82	73	66	60	76	68	62	57	58	53	50	49	45	43	40	38	36
4	76	65	57	52	70	60	54	49	52	47	43	44	40	37	36	34	31
5	70	58	50	45	64	54	47	42	47	41	37	40	35	32	33	30	28
6	64	52	45	39	59	49	42	37	42	37	33	36	32	29	30	27	25
7	59	47	40	34	55	44	37	32	38	33	29	33	29	25	28	24	22
8	55	43	36	30	51	40	34	29	35	30	26	30	26	23	25	22	20
9	52	40	32	27	48	37	30	26	32	27	23	28	24	21	24	20	18
10	48	36	29	25	45	34	28	23	30	25	21	26	22	19	22	19	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5040	5040	5040
5°	5039	4949	4984
10°	4980	4841	4815
15°	4903	4670	4558
20°	4803	4439	4245
25°	4702	4183	3942
30°	4568	3921	3562
35°	4436	3640	3227
40°	4302	3351	2845
45°	4147	3031	2499
50°	3986	2710	2162
55°	3817	2368	1838
60°	3620	2012	1506
65°	3394	1651	1348
70°	3120	1315	1209
75°	2774	1138	1086
80°	2278	925	920
85°	1482	574	655

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4147 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	214.8	2.3
10°-20°	589.7	6.3
20°-30°	827.9	8.8
30°-40°	902.4	9.6
40°-50°	829.4	8.8
50°-60°	651.4	6.9
60°-70°	424.0	4.5
70°-80°	218.2	2.3
80°-90°	58.5	0.6
90°-100°	52.9	0.6
100°-110°	197.2	2.1
110°-120°	523.0	5.6
120°-130°	867.4	9.2
130°-140°	921.3	9.8
140°-150°	856.3	9.1
150°-160°	688.4	7.3
160°-170°	443.6	4.7
170°-180°	152.7	1.6
0°-30°	1632.3	17.3
0°-40°	2534.7	26.9
0°-60°	4015.5	42.6
0°-90°	4716.3	50.1
90°-120°	773.0	8.2
90°-150°	3418.0	36.3
90°-180°	4703.0	49.9
0°-180°	9419.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2292	2292	2292	2292	2292	
5°	2292	2282	2254	2273	2267	217
15°	2180	2157	2086	2047	2026	614
25°	1979	1912	1775	1690	1659	910
35°	1705	1599	1417	1286	1240	1067
45°	1394	1255	1037	890	840	1076
55°	1060	898	674	550	510	947
65°	716	548	361	290	284	709
75°	382	236	166	151	149	404
85°	89	46	39	39	39	102
90°	1	14	23	29	31	9
95°	75	37	45	51	50	89
105°	353	388	71	84	88	377
115°	667	687	716	179	95	657
125°	944	959	981	989	992	842
135°	1168	1186	1197	1208	1206	902
145°	1355	1353	1373	1381	1376	847
155°	1492	1481	1495	1502	1493	687
165°	1572	1565	1568	1576	1568	444
175°	1608	1599	1602	1610	1598	153
180°	1604	1604	1604	1604	1604	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2291.9	2291.9	2291.9	2291.9	2291.9
2.5°	2302.2	2291.9	2269.0	2289.9	2285.7
5°	2291.9	2281.5	2254.5	2273.2	2267.0
7.5°	2273.2	2260.8	2231.8	2239.9	2229.6
10°	2248.3	2233.8	2192.4	2186.0	2173.7
12.5°	2217.2	2198.5	2142.5	2130.1	2107.2
15°	2179.8	2157.0	2086.5	2047.2	2026.5
17.5°	2136.3	2103.1	2015.9	1970.3	1937.1
20°	2086.5	2044.9	1941.3	1889.6	1843.8
22.5°	2032.7	1984.9	1864.5	1794.1	1763.1
25°	1978.7	1912.2	1775.4	1690.4	1659.2
27.5°	1914.5	1843.8	1692.4	1595.0	1547.2
30°	1846.0	1767.0	1601.1	1495.5	1439.4
32.5°	1779.6	1684.1	1514.2	1389.6	1337.7
35°	1704.9	1599.1	1416.7	1286.0	1240.2
37.5°	1632.4	1518.1	1325.4	1182.1	1130.4
40°	1555.5	1431.2	1229.9	1082.7	1028.7
42.5°	1476.8	1344.1	1134.6	981.0	929.3
45°	1393.8	1254.7	1037.1	889.7	839.9
47.5°	1315.0	1167.8	943.8	796.4	750.8
50°	1227.9	1080.7	852.5	709.2	665.9
52.5°	1142.7	987.1	765.3	628.4	589.1
55°	1059.8	898.0	674.0	549.7	510.3
57.5°	974.9	808.9	593.3	477.1	443.9
60°	887.7	721.8	508.1	402.5	369.2
62.5°	802.7	636.8	435.5	336.0	319.5
65°	715.6	547.5	360.9	290.5	284.1
67.5°	632.6	464.5	290.5	255.0	248.9
70°	545.5	383.7	240.5	219.8	211.4
72.5°	462.6	309.0	201.1	184.7	180.5
75°	381.6	236.3	165.9	151.4	149.4
77.5°	300.8	167.9	130.7	122.3	118.2
80°	226.0	120.3	99.5	91.3	91.3
82.5°	157.6	81.0	68.4	64.2	64.2
85°	89.1	45.6	39.4	39.4	39.4
87.5°	33.2	16.5	16.5	14.5	14.5
90°	1.1	13.9	23.1	29.1	31.3
92.5°	29.1	24.4	27.8	30.2	31.3
95°	75.4	37.1	45.2	51.2	49.9
97.5°	135.8	40.6	59.1	62.7	63.8
100°	205.5	46.4	66.1	75.4	77.7
102.5°	282.0	279.8	68.5	81.2	84.8
105°	352.8	387.7	70.8	83.5	88.2
107.5°	435.3	464.2	73.2	85.9	90.5
110°	514.3	538.5	203.2	87.1	91.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	588.5	609.3	589.6	89.3	92.9
115°	667.4	687.1	716.2	178.8	95.2
117.5°	735.9	759.1	778.9	612.8	308.7
120°	812.5	829.9	850.9	864.7	708.1
122.5°	877.4	896.0	919.3	926.2	927.5
125°	943.6	958.8	980.8	989.0	992.4
127.5°	1004.0	1020.3	1037.8	1049.3	1050.4
130°	1060.9	1079.5	1092.2	1105.0	1103.9
132.5°	1119.0	1134.1	1146.8	1157.2	1156.1
135°	1167.8	1186.4	1196.7	1208.4	1206.0
137.5°	1218.7	1232.6	1244.4	1255.9	1252.5
140°	1268.6	1278.0	1290.7	1301.2	1295.4
142.5°	1310.5	1318.7	1333.7	1342.9	1337.1
145°	1354.6	1353.4	1373.1	1381.2	1375.5
147.5°	1392.8	1389.3	1409.1	1414.8	1410.3
150°	1430.0	1421.9	1440.5	1447.4	1441.6
152.5°	1461.3	1452.1	1469.4	1476.5	1468.3
155°	1491.5	1481.1	1495.1	1502.0	1492.7
157.5°	1515.9	1506.6	1517.1	1525.3	1515.9
160°	1536.8	1529.8	1536.8	1543.7	1535.6
162.5°	1555.3	1548.4	1554.2	1562.3	1551.9
165°	1571.6	1564.7	1568.1	1576.3	1568.1
167.5°	1584.4	1577.4	1581.0	1589.1	1578.6
170°	1594.9	1587.8	1590.2	1598.3	1587.8
172.5°	1601.8	1594.9	1597.2	1605.4	1594.9
175°	1607.6	1599.4	1601.8	1609.9	1598.3
177.5°	1609.9	1601.8	1603.0	1611.1	1600.7
180°	1604.1	1604.1	1604.1	1604.1	1604.1

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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	12.66	13.49	13.62	14.46	15.74	8.62	9.45	9.58	10.42	11.70
	3H	14.32	15.06	15.29	16.04	17.34	9.79	10.53	10.76	11.51	12.81
	4H	14.91	15.61	15.90	16.60	17.90	10.23	10.93	11.21	11.92	13.22
	6H	15.32	15.96	16.32	16.96	18.27	10.53	11.18	11.53	12.17	13.49
	8H	15.44	16.05	16.44	17.06	18.37	10.61	11.23	11.62	12.24	13.55
	12H	15.49	16.07	16.50	17.07	18.41	10.65	11.23	11.66	12.23	13.57
4H	2H	12.67	13.37	13.67	14.36	15.66	9.20	9.91	10.20	10.89	12.20
	3H	14.48	15.06	15.48	16.08	17.39	10.53	11.12	11.54	12.13	13.45
	4H	15.16	15.69	16.17	16.70	18.04	11.07	11.60	12.08	12.61	13.95
	6H	15.65	16.11	16.67	17.14	18.48	11.46	11.92	12.49	12.95	14.29
	8H	15.82	16.24	16.84	17.27	18.62	11.58	12.01	12.61	13.04	14.39
	12H	15.90	16.29	16.94	17.33	18.68	11.64	12.02	12.68	13.06	14.42
8H	4H	15.12	15.55	16.14	16.57	17.92	11.33	11.76	12.36	12.79	14.14
	6H	15.66	16.02	16.71	17.08	18.43	11.83	12.18	12.87	13.25	14.60
	8H	15.87	16.18	16.92	17.23	18.60	12.00	12.31	13.06	13.37	14.74
	12H	15.99	16.26	17.05	17.31	18.72	12.11	12.38	13.17	13.43	14.84
12H	4H	15.07	15.46	16.11	16.50	17.85	11.34	11.72	12.38	12.76	14.12
	6H	15.64	15.95	16.69	17.00	18.37	11.87	12.18	12.93	13.23	14.60
	8H	15.84	16.12	16.90	17.16	18.57	12.07	12.34	13.12	13.39	14.80