

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: P919988

Luminaire Tested: DFN2DIP-SQ3F0-040D060US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P919988
REPORT IS A COMBINATION OF REPORTS P899897 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-040D060US935-FLLFLL
Description: 3 foot, Square Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

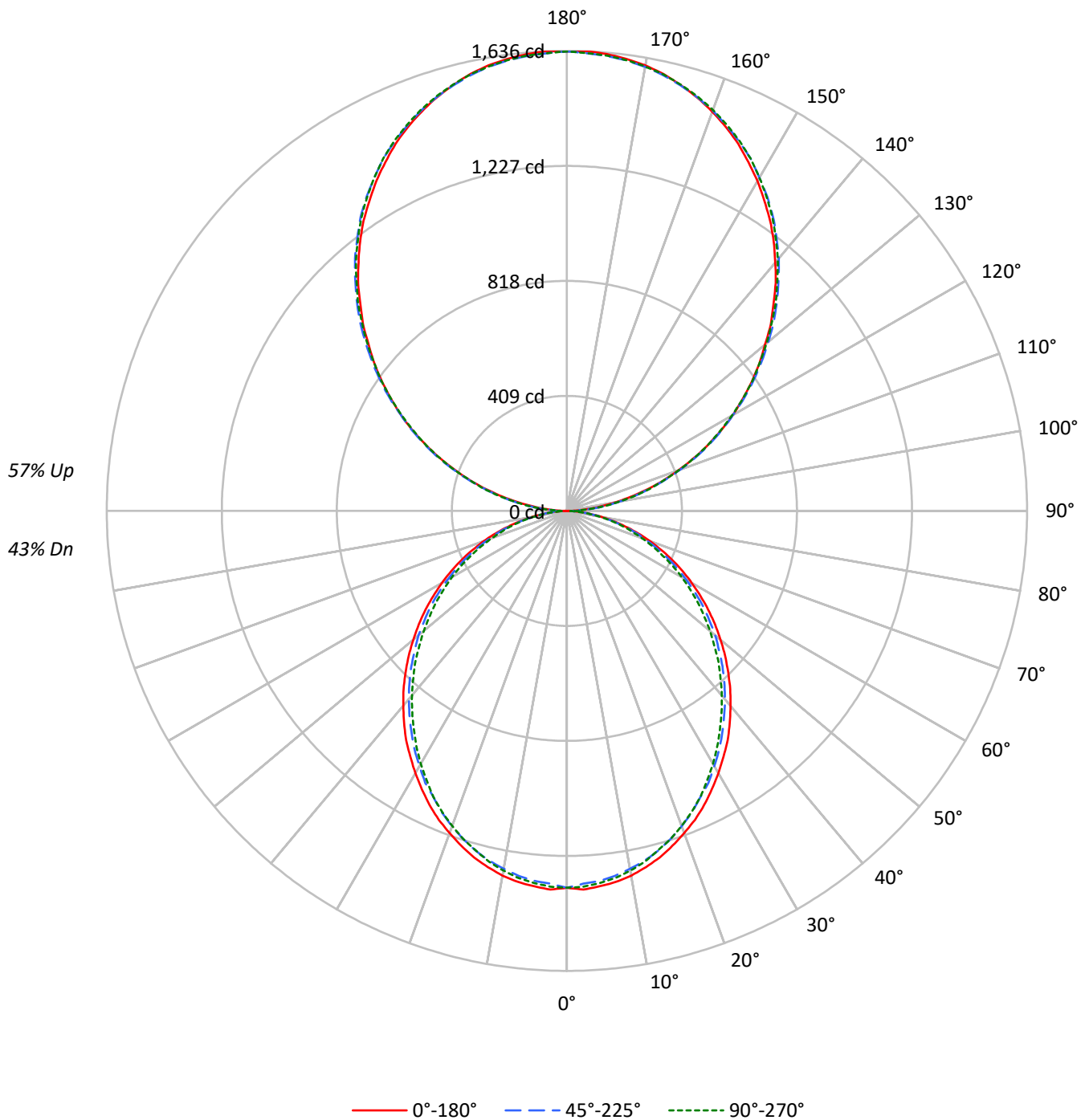
Lumens per Lamp: N/A
Luminaire Lumens: 7981.4 lumens
Efficiency: N/A
Efficacy: 103.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 77.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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	105	105	105	105	96	96	96	96	79	79	79	64	64	64	49	49	49
1	96	92	88	85	88	84	81	78	69	67	65	56	54	53	44	43	42
2	88	80	74	69	80	73	68	64	61	57	54	49	47	44	38	37	35
3	80	70	63	57	73	65	58	53	54	49	45	44	40	37	34	32	30
4	73	62	55	49	66	57	50	45	48	43	39	39	35	32	30	28	26
5	67	56	47	42	61	51	44	39	43	37	33	35	31	28	27	25	22
6	62	50	42	36	56	46	39	34	38	33	29	31	27	24	25	22	20
7	57	45	37	31	52	41	34	29	35	29	25	29	24	21	23	20	18
8	53	41	33	28	48	38	31	26	32	26	23	26	22	19	21	18	16
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14
10	46	34	27	22	42	31	25	21	27	22	18	22	18	15	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1535	1535	1535
5°	1537	1513	1524
10°	1524	1492	1503
15°	1500	1466	1470
20°	1469	1431	1437
25°	1438	1389	1398
30°	1399	1350	1349
35°	1362	1304	1297
40°	1317	1258	1248
45°	1272	1211	1197
50°	1223	1163	1139
55°	1171	1106	1085
60°	1112	1039	1023
65°	1048	970	950
70°	967	885	872
75°	854	783	798
80°	718	653	660
85°	506	433	432

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1644 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.1	1.6
10°-20°	354.9	4.4
20°-30°	521.5	6.5
30°-40°	605.7	7.6
40°-50°	605.0	7.6
50°-60°	527.5	6.6
60°-70°	389.9	4.9
70°-80°	220.6	2.8
80°-90°	62.9	0.8
90°-100°	101.1	1.3
100°-110°	321.2	4.0
110°-120°	549.7	6.9
120°-130°	723.0	9.1
130°-140°	811.5	10.2
140°-150°	795.8	10.0
150°-160°	667.5	8.4
160°-170°	442.7	5.5
170°-180°	154.7	1.9
0°-30°	1002.5	12.6
0°-40°	1608.3	20.1
0°-60°	2740.7	34.3
0°-90°	3414.2	42.8
90°-120°	972.0	12.2
90°-150°	3302.3	41.4
90°-180°	4567.0	57.2
0°-180°	7981.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1340	1340	1340	1340	1340	
5°	1340	1335	1321	1331	1329	127
15°	1276	1268	1251	1256	1250	359
25°	1154	1144	1122	1125	1122	531
35°	996	983	963	955	948	622
45°	810	802	782	768	763	626
55°	614	606	590	575	568	548
65°	414	406	393	381	375	409
75°	216	214	207	200	202	231
85°	53	52	50	46	45	59
90°	2	18	48	45	47	8
95°	72	86	88	88	86	80
105°	296	300	303	306	306	313
115°	552	560	557	556	552	546
125°	802	815	811	806	805	717
135°	1038	1053	1056	1055	1051	802
145°	1260	1270	1278	1279	1274	787
155°	1441	1445	1449	1456	1452	663
165°	1567	1566	1566	1576	1569	442
175°	1631	1627	1624	1634	1625	155
180°	1634	1634	1634	1634	1634	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1340.1	1340.1	1340.1	1340.1	1340.1
2.5°	1347.9	1341.4	1327.2	1340.1	1337.6
5°	1340.1	1335.0	1320.8	1331.0	1328.6
7.5°	1331.0	1323.4	1309.1	1319.6	1317.0
10°	1317.0	1307.9	1292.5	1302.8	1298.9
12.5°	1297.5	1289.9	1274.4	1280.9	1278.2
15°	1275.7	1268.0	1251.2	1256.4	1250.0
17.5°	1248.6	1241.0	1224.2	1230.5	1224.2
20°	1218.9	1211.3	1193.3	1197.0	1192.1
22.5°	1189.4	1177.8	1161.0	1161.0	1158.4
25°	1154.5	1144.3	1122.4	1124.9	1122.4
27.5°	1115.9	1106.8	1090.2	1086.3	1079.9
30°	1077.3	1066.9	1047.7	1043.8	1038.6
32.5°	1036.0	1028.4	1007.7	1000.0	994.7
35°	996.1	983.3	962.6	954.8	948.4
37.5°	951.0	939.3	918.7	909.7	903.3
40°	904.7	894.2	873.6	862.1	857.0
42.5°	859.5	849.1	828.6	815.6	808.0
45°	810.5	801.6	782.1	768.1	762.8
47.5°	762.8	753.8	733.2	719.0	711.4
50°	712.6	706.1	688.1	670.0	663.6
52.5°	663.6	654.6	637.9	623.7	614.7
55°	613.5	605.6	590.2	574.7	568.3
57.5°	563.1	556.7	539.8	524.4	519.3
60°	512.8	507.7	489.7	475.5	471.7
62.5°	463.9	454.9	442.0	429.1	424.0
65°	413.7	405.9	393.0	381.4	375.1
67.5°	362.1	355.6	344.1	335.1	329.9
70°	314.4	309.3	297.6	288.6	283.5
72.5°	265.5	260.3	253.9	244.9	241.0
75°	216.5	214.0	207.4	199.8	202.3
77.5°	172.6	167.5	164.9	161.0	157.2
80°	128.9	127.5	124.9	121.1	118.6
82.5°	87.6	87.6	86.4	81.2	81.2
85°	52.8	51.6	50.3	46.3	45.1
87.5°	23.2	20.7	18.1	14.2	12.8
90°	1.5	17.7	48.3	45.3	46.8
92.5°	30.6	41.4	42.9	44.3	44.3
95°	71.9	85.7	88.2	88.2	85.7
97.5°	119.7	132.5	137.9	137.9	137.9
100°	174.9	186.1	190.1	190.1	188.6
102.5°	233.0	241.3	246.8	248.2	246.8
105°	296.5	300.5	303.4	305.9	305.9
107.5°	359.6	365.5	365.5	366.4	359.6
110°	420.7	428.5	428.5	428.5	424.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	486.6	495.0	493.5	489.6	486.6
115°	551.6	559.6	557.1	555.6	551.6
117.5°	616.2	627.1	620.1	616.2	612.3
120°	681.2	692.1	681.2	681.2	676.7
122.5°	740.3	754.1	747.2	743.3	740.3
125°	802.4	814.7	810.7	806.3	804.9
127.5°	863.0	878.2	872.8	866.9	863.0
130°	919.6	937.4	934.9	931.9	926.5
132.5°	983.2	996.9	997.9	991.0	987.0
135°	1037.8	1053.1	1056.0	1054.6	1050.6
137.5°	1098.9	1111.2	1113.7	1112.7	1106.8
140°	1152.6	1164.9	1171.8	1171.8	1166.4
142.5°	1207.7	1220.0	1224.0	1225.5	1220.0
145°	1260.0	1269.8	1277.7	1279.2	1273.8
147.5°	1306.7	1319.0	1325.0	1327.4	1322.0
150°	1355.0	1363.4	1368.8	1373.2	1368.8
152.5°	1397.8	1406.3	1413.2	1418.6	1413.2
155°	1440.7	1444.7	1449.1	1456.0	1451.6
157.5°	1477.6	1480.7	1483.1	1493.0	1486.1
160°	1510.7	1513.6	1515.1	1523.4	1517.6
162.5°	1541.2	1541.2	1542.6	1552.0	1545.1
165°	1567.3	1565.8	1565.8	1575.7	1568.8
167.5°	1591.0	1586.6	1586.6	1596.4	1589.5
170°	1608.7	1604.7	1603.3	1613.1	1604.7
172.5°	1621.0	1617.0	1615.6	1625.4	1617.0
175°	1630.8	1626.9	1623.9	1633.8	1625.4
177.5°	1636.2	1632.4	1629.4	1637.7	1629.4
180°	1633.8	1633.8	1633.8	1633.8	1633.8

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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	8.02	8.82	9.04	9.84	11.22	7.57	8.37	8.59	9.40	10.77
	3H	9.67	10.39	10.70	11.42	12.81	9.18	9.90	10.21	10.93	12.32
	4H	10.25	10.93	11.29	11.97	13.37	9.76	10.44	10.80	11.47	12.87
	6H	10.65	11.27	11.69	12.31	13.72	10.14	10.77	11.19	11.81	13.22
	8H	10.75	11.34	11.80	12.40	13.81	10.24	10.84	11.30	11.90	13.30
	12H	10.79	11.36	11.85	12.41	13.84	10.28	10.85	11.34	11.90	13.33
4H	2H	8.47	9.15	9.51	10.19	11.58	8.11	8.79	9.16	9.83	11.23
	3H	10.32	10.89	11.38	11.96	13.37	9.92	10.48	10.97	11.55	12.96
	4H	11.03	11.55	12.09	12.61	14.04	10.61	11.13	11.67	12.18	13.62
	6H	11.54	11.99	12.61	13.07	14.49	11.11	11.55	12.18	12.63	14.06
	8H	11.68	12.10	12.75	13.17	14.62	11.25	11.66	12.32	12.74	14.18
	12H	11.75	12.13	12.84	13.22	14.66	11.30	11.68	12.39	12.77	14.22
8H	4H	11.22	11.64	12.29	12.71	14.15	10.84	11.26	11.91	12.33	13.77
	6H	11.84	12.19	12.93	13.30	14.74	11.46	11.80	12.55	12.92	14.36
	8H	12.06	12.36	13.16	13.46	14.92	11.67	11.97	12.77	13.06	14.53
	12H	12.18	12.45	13.29	13.54	15.04	11.77	12.04	12.88	13.13	14.63
12H	4H	11.20	11.58	12.29	12.66	14.11	10.83	11.21	11.92	12.30	13.74
	6H	11.87	12.17	12.97	13.27	14.73	11.50	11.80	12.60	12.90	14.36
	8H	12.10	12.37	13.21	13.46	14.96	11.72	11.99	12.83	13.08	14.58