

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: P925738

Luminaire Tested: DFN2DIP-SQ3F0-120D070US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P925738
REPORT IS A COMBINATION OF REPORTS P899932 AND P896733
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ3F0-120D070US950-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

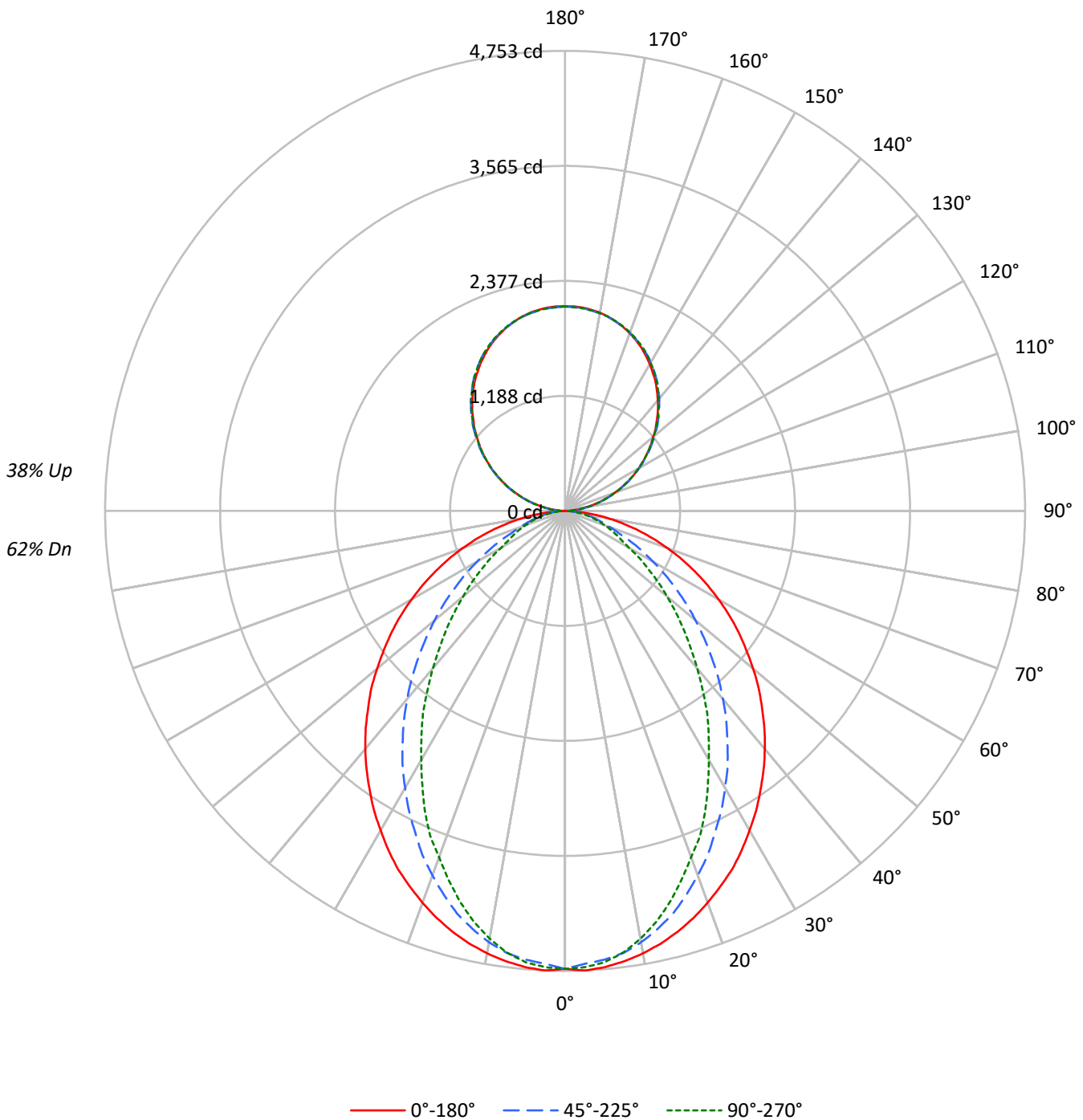
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15640.9 lumens
Efficiency: N/A
Efficacy: 87.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.06' x L: 3.06' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 178.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
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			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67	67	67	67	62
1	101	97	93	90	95	91	88	85	80	78	75	70	68	66	60	59	58	60	59	58	54
2	93	85	79	74	87	80	75	71	71	67	63	62	59	56	54	52	50	54	52	50	46
3	85	76	68	63	79	71	65	60	63	58	54	55	52	48	48	46	43	48	46	43	40
4	78	67	60	54	73	64	57	51	56	51	47	50	46	42	44	40	38	44	40	38	34
5	72	60	52	47	67	57	50	45	51	45	41	45	41	37	40	36	33	40	36	33	30
6	66	55	47	41	62	52	44	39	46	40	36	41	36	33	36	32	30	36	32	30	27
7	62	49	42	36	58	47	40	35	42	36	32	38	33	29	33	29	27	33	29	27	24
8	57	45	37	32	54	43	36	31	39	33	29	34	30	26	31	27	24	31	27	24	22
9	54	41	34	29	50	39	33	28	36	30	26	32	27	24	28	25	22	28	25	22	20
10	50	38	31	26	47	36	30	25	33	27	24	30	25	22	26	23	20	26	23	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5421	5421	5421
5°	5427	5332	5368
10°	5369	5224	5191
15°	5292	5047	4920
20°	5191	4806	4587
25°	5087	4536	4266
30°	4949	4260	3859
35°	4814	3963	3501
40°	4675	3656	3092
45°	4515	3316	2721
50°	4350	2974	2359
55°	4176	2608	2011
60°	3975	2226	1653
65°	3744	1838	1486
70°	3463	1476	1342
75°	3109	1294	1217
80°	2598	1074	1050
85°	1762	700	778

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4515 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	443.4	2.8
10°-20°	1217.3	7.8
20°-30°	1709.1	10.9
30°-40°	1863.0	11.9
40°-50°	1712.3	10.9
50°-60°	1344.7	8.6
60°-70°	875.3	5.6
70°-80°	450.6	2.9
80°-90°	121.0	0.8
90°-100°	130.7	0.8
100°-110°	415.3	2.7
110°-120°	710.6	4.5
120°-130°	934.6	6.0
130°-140°	1049.0	6.7
140°-150°	1028.7	6.6
150°-160°	862.9	5.5
160°-170°	572.3	3.7
170°-180°	200.0	1.3
0°-30°	3369.8	21.5
0°-40°	5232.8	33.5
0°-60°	8289.9	53.0
0°-90°	9736.8	62.3
90°-120°	1256.6	8.0
90°-150°	4268.9	27.3
90°-180°	5904.0	37.7
0°-180°	15640.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4732	4732	4732	4732	4732	
5°	4732	4710	4654	4693	4680	449
15°	4500	4453	4308	4226	4184	1268
25°	4085	3948	3665	3490	3425	1879
35°	3520	3301	2925	2655	2560	2203
45°	2878	2590	2141	1837	1734	2222
55°	2188	1854	1392	1135	1054	1955
65°	1477	1130	745	600	586	1465
75°	788	488	343	312	308	833
85°	184	94	81	81	81	211
90°	2	23	62	59	60	15
95°	93	111	114	114	111	103
105°	383	388	392	395	395	405
115°	713	723	720	718	713	705
125°	1037	1053	1048	1042	1040	927
135°	1342	1361	1365	1363	1358	1037
145°	1629	1642	1652	1654	1647	1018
155°	1862	1868	1873	1882	1876	857
165°	2026	2024	2024	2037	2028	572
175°	2108	2103	2099	2112	2101	200
180°	2112	2112	2112	2112	2112	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4731.5	4731.5	4731.5	4731.5	4731.5
2.5°	4752.8	4731.5	4684.2	4727.4	4718.7
5°	4731.5	4710.1	4654.2	4692.8	4680.1
7.5°	4692.8	4667.3	4607.4	4624.2	4602.9
10°	4641.5	4611.5	4526.1	4512.9	4487.5
12.5°	4577.4	4538.8	4422.9	4397.6	4350.3
15°	4500.2	4453.0	4307.6	4226.2	4183.6
17.5°	4410.2	4341.7	4161.7	4067.8	3999.2
20°	4307.6	4221.7	4007.8	3901.0	3806.5
22.5°	4196.3	4097.7	3849.2	3703.8	3639.8
25°	4085.0	3947.7	3665.2	3489.8	3425.3
27.5°	3952.3	3806.5	3493.9	3292.7	3194.1
30°	3811.0	3648.0	3305.4	3087.3	2971.5
32.5°	3673.9	3476.7	3126.0	2868.9	2761.6
35°	3519.9	3301.3	2924.7	2654.9	2560.3
37.5°	3369.9	3134.2	2736.2	2440.4	2333.7
40°	3211.4	2954.7	2539.1	2235.1	2123.8
42.5°	3048.7	2774.8	2342.4	2025.2	1918.5
45°	2877.5	2590.4	2141.1	1836.7	1734.0
47.5°	2714.8	2410.9	1948.4	1644.1	1550.1
50°	2535.0	2231.0	1759.9	1464.2	1374.7
52.5°	2359.1	2037.9	1580.0	1297.4	1216.2
55°	2187.9	1854.0	1391.5	1134.8	1053.5
57.5°	2012.5	1670.0	1224.7	984.9	916.3
60°	1832.6	1490.1	1048.9	830.9	762.3
62.5°	1657.3	1314.7	899.0	693.7	659.6
65°	1477.4	1130.3	745.1	599.7	586.5
67.5°	1306.1	959.0	599.7	526.5	513.8
70°	1126.2	792.3	496.6	453.8	436.6
72.5°	955.0	637.8	415.2	381.1	372.5
75°	787.7	487.9	342.6	312.5	308.4
77.5°	621.1	346.6	269.9	252.6	243.9
80°	466.6	248.5	205.3	188.5	188.5
82.5°	325.3	167.1	141.3	132.6	132.6
85°	184.0	94.1	81.3	81.3	81.3
87.5°	68.6	34.1	34.1	30.0	30.0
90°	1.9	22.9	62.4	58.6	60.5
92.5°	39.5	53.5	55.4	57.3	57.3
95°	92.9	110.8	114.0	114.0	110.8
97.5°	154.7	171.2	178.3	178.3	178.3
100°	226.0	240.7	245.8	245.8	243.8
102.5°	301.2	312.0	319.0	320.9	319.0
105°	383.3	388.4	392.2	395.4	395.4
107.5°	464.8	472.4	472.4	473.8	464.8
110°	543.8	554.0	554.0	554.0	548.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	629.1	639.9	638.0	632.9	629.1
115°	713.1	723.3	720.2	718.3	713.1
117.5°	796.5	810.5	801.6	796.5	791.4
120°	880.5	894.6	880.5	880.5	874.8
122.5°	957.0	974.8	965.9	960.8	957.0
125°	1037.2	1053.1	1048.1	1042.3	1040.4
127.5°	1115.5	1135.3	1128.3	1120.7	1115.5
130°	1188.8	1211.7	1208.5	1204.7	1197.7
132.5°	1270.9	1288.8	1290.0	1281.1	1276.0
135°	1341.6	1361.3	1365.2	1363.2	1358.1
137.5°	1420.5	1436.4	1439.6	1438.3	1430.7
140°	1490.0	1505.9	1514.8	1514.8	1507.8
142.5°	1561.2	1577.2	1582.2	1584.1	1577.2
145°	1628.8	1641.5	1651.7	1653.6	1646.6
147.5°	1689.2	1705.2	1712.8	1716.0	1709.0
150°	1751.6	1762.4	1769.5	1775.2	1769.5
152.5°	1807.0	1817.8	1826.7	1833.8	1826.7
155°	1862.4	1867.5	1873.3	1882.1	1876.4
157.5°	1910.2	1914.0	1917.2	1929.9	1921.0
160°	1952.8	1956.7	1958.6	1969.3	1961.7
162.5°	1992.3	1992.3	1994.2	2006.3	1997.4
165°	2026.0	2024.1	2024.1	2036.9	2027.9
167.5°	2056.6	2050.9	2050.9	2063.6	2054.7
170°	2079.5	2074.5	2072.6	2085.3	2074.5
172.5°	2095.5	2090.3	2088.4	2101.2	2090.3
175°	2108.1	2103.1	2099.3	2112.0	2101.2
177.5°	2115.2	2110.1	2106.2	2117.1	2106.2
180°	2112.0	2112.0	2112.0	2112.0	2112.0



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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	14.06	15.00	14.91	15.87	16.96	10.02	10.96	10.87	11.83	12.92
	3H	15.74	16.58	16.60	17.46	18.57	11.21	12.05	12.07	12.93	14.04
	4H	16.35	17.14	17.23	18.03	19.15	11.66	12.45	12.54	13.34	14.46
	6H	16.77	17.51	17.67	18.40	19.53	11.98	12.71	12.87	13.60	14.74
	8H	16.90	17.60	17.80	18.51	19.64	12.07	12.77	12.97	13.68	14.81
	12H	16.96	17.63	17.87	18.53	19.69	12.12	12.78	13.02	13.68	14.84
4H	2H	14.09	14.88	14.97	15.77	16.89	10.63	11.42	11.51	12.30	13.43
	3H	15.92	16.58	16.82	17.50	18.64	11.98	12.64	12.87	13.55	14.69
	4H	16.61	17.22	17.52	18.13	19.29	12.52	13.13	13.43	14.04	15.20
	6H	17.13	17.65	18.05	18.58	19.75	12.94	13.46	13.86	14.40	15.56
	8H	17.31	17.79	18.23	18.72	19.90	13.07	13.55	13.99	14.48	15.66
	12H	17.40	17.84	18.35	18.79	19.97	13.14	13.57	14.08	14.52	15.71
8H	4H	16.59	17.07	17.51	18.00	19.18	12.81	13.29	13.73	14.22	15.40
	6H	17.15	17.55	18.10	18.52	19.70	13.32	13.72	14.27	14.70	15.88
	8H	17.37	17.72	18.33	18.68	19.88	13.51	13.86	14.47	14.83	16.02
	12H	17.51	17.82	18.47	18.77	20.02	13.63	13.94	14.59	14.89	16.14
12H	4H	16.55	16.98	17.49	17.93	19.11	12.82	13.25	13.76	14.20	15.39
	6H	17.13	17.48	18.09	18.45	19.64	13.37	13.73	14.33	14.69	15.89
	8H	17.35	17.66	18.31	18.62	19.86	13.58	13.89	14.54	14.85	16.10