

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: P912098

Luminaire Tested: DFN2DIP-SQ3F0-120D070US850-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P912098
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-SQ3F0-120D070US850-RLLFLL
Description: 3 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

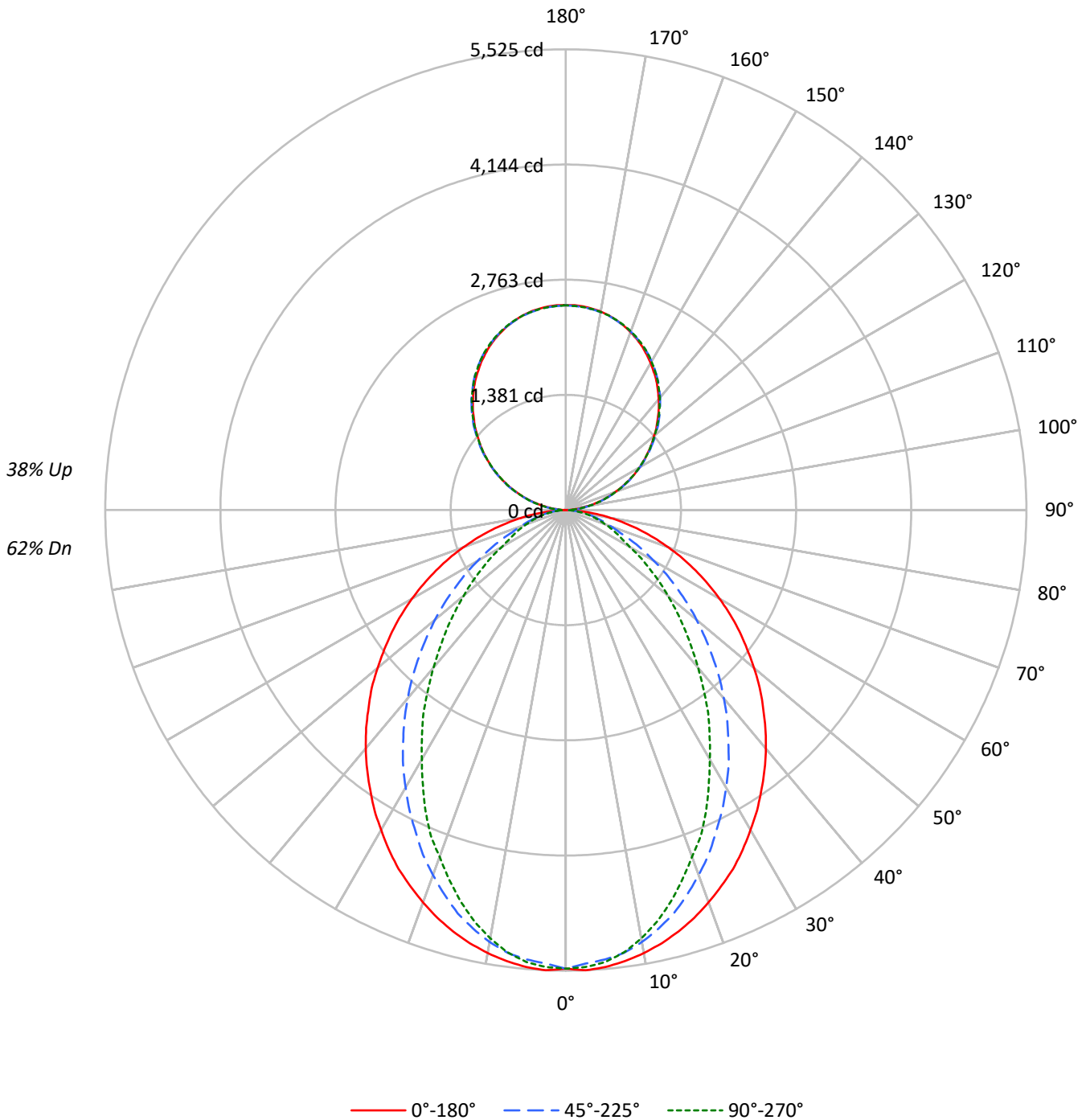
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 18182.1 lumens
Efficiency: N/A
Efficacy: 102.0 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°	6302	6302	6302
5°	6308	6198	6240
10°	6242	6072	6035
15°	6152	5867	5719
20°	6034	5587	5332
25°	5914	5273	4959
30°	5753	4952	4486
35°	5596	4607	4070
40°	5435	4250	3594
45°	5249	3855	3163
50°	5056	3457	2742
55°	4855	3032	2338
60°	4621	2587	1922
65°	4352	2137	1728
70°	4025	1716	1560
75°	3614	1504	1415
80°	3020	1248	1220
85°	2048	813	905

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5249 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	515.5	2.8
10°-20°	1415.1	7.8
20°-30°	1986.8	10.9
30°-40°	2165.7	11.9
40°-50°	1990.5	10.9
50°-60°	1563.2	8.6
60°-70°	1017.5	5.6
70°-80°	523.8	2.9
80°-90°	140.7	0.8
90°-100°	151.9	0.8
100°-110°	482.7	2.7
110°-120°	826.1	4.5
120°-130°	1086.4	6.0
130°-140°	1219.5	6.7
140°-150°	1195.8	6.6
150°-160°	1003.1	5.5
160°-170°	665.3	3.7
170°-180°	232.5	1.3
0°-30°	3917.3	21.5
0°-40°	6083.0	33.5
0°-60°	9636.8	53.0
0°-90°	11318.7	62.3
90°-120°	1460.7	8.0
90°-150°	4962.4	27.3
90°-180°	6863.0	37.7
0°-180°	18182.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5500	5500	5500	5500	5500	
5°	5500	5475	5410	5455	5440	522
15°	5231	5176	5008	4913	4863	1474
25°	4749	4589	4261	4057	3982	2184
35°	4092	3838	3400	3086	2976	2561
45°	3345	3011	2489	2135	2016	2583
55°	2543	2155	1618	1319	1225	2273
65°	1717	1314	866	697	682	1703
75°	916	567	398	363	358	969
85°	214	109	94	94	94	246
90°	2	27	72	68	70	18
95°	108	129	132	132	129	120
105°	446	452	456	460	460	470
115°	829	841	837	835	829	820
125°	1206	1224	1218	1212	1210	1077
135°	1560	1582	1587	1585	1579	1205
145°	1893	1908	1920	1922	1914	1183
155°	2165	2171	2178	2188	2181	997
165°	2355	2353	2353	2368	2357	664
175°	2451	2445	2440	2455	2443	233
180°	2455	2455	2455	2455	2455	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5500.2	5500.2	5500.2	5500.2	5500.2
2.5°	5525.0	5500.2	5445.3	5495.4	5485.3
5°	5500.2	5475.4	5410.4	5455.3	5440.5
7.5°	5455.3	5425.7	5356.0	5375.5	5350.7
10°	5395.6	5360.8	5261.4	5246.1	5216.6
12.5°	5321.1	5276.3	5141.5	5112.0	5057.2
15°	5231.4	5176.5	5007.5	4912.9	4863.3
17.5°	5126.8	5047.1	4837.9	4728.7	4648.9
20°	5007.5	4907.7	4658.9	4534.8	4424.9
22.5°	4878.0	4763.5	4474.6	4305.6	4231.2
25°	4748.7	4589.2	4260.7	4056.8	3981.9
27.5°	4594.5	4424.9	4061.6	3827.7	3713.0
30°	4430.2	4240.7	3842.5	3588.9	3454.3
32.5°	4270.8	4041.5	3633.9	3335.0	3210.3
35°	4091.8	3837.7	3399.9	3086.2	2976.3
37.5°	3917.4	3643.4	3180.7	2836.9	2712.8
40°	3733.1	3434.8	2951.6	2598.3	2468.9
42.5°	3544.0	3225.6	2722.9	2354.3	2230.2
45°	3345.0	3011.3	2488.9	2135.2	2015.7
47.5°	3155.9	2802.7	2265.0	1911.3	1801.9
50°	2946.8	2593.5	2045.9	1702.1	1598.1
52.5°	2742.4	2369.0	1836.7	1508.2	1413.8
55°	2543.4	2155.2	1617.6	1319.2	1224.7
57.5°	2339.4	1941.3	1423.7	1144.9	1065.2
60°	2130.4	1732.1	1219.3	965.9	886.2
62.5°	1926.6	1528.3	1045.1	806.5	766.8
65°	1717.4	1313.9	866.1	697.1	681.8
67.5°	1518.3	1114.8	697.1	612.1	597.3
70°	1309.2	921.0	577.2	527.6	507.5
72.5°	1110.1	741.5	482.6	443.0	433.1
75°	915.7	567.1	398.2	363.3	358.5
77.5°	722.0	402.9	313.7	293.7	283.6
80°	542.4	288.9	238.7	219.1	219.1
82.5°	378.2	194.3	164.2	154.2	154.2
85°	213.9	109.3	94.5	94.5	94.5
87.5°	79.7	39.6	39.6	34.8	34.8
90°	2.2	26.6	72.5	68.1	70.3
92.5°	45.9	62.2	64.4	66.7	66.7
95°	108.0	128.8	132.5	132.5	128.8
97.5°	179.9	199.1	207.3	207.3	207.3
100°	262.7	279.8	285.7	285.7	283.5
102.5°	350.1	362.6	370.8	373.1	370.8
105°	445.6	451.5	455.9	459.7	459.7
107.5°	540.3	549.2	549.2	550.7	540.3
110°	632.1	644.0	644.0	644.0	638.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	731.3	743.9	741.7	735.7	731.3
115°	829.0	840.8	837.2	835.0	829.0
117.5°	925.9	942.2	931.9	925.9	920.0
120°	1023.6	1039.9	1023.6	1023.6	1017.0
122.5°	1112.4	1133.2	1122.9	1116.9	1112.4
125°	1205.7	1224.2	1218.3	1211.7	1209.5
127.5°	1296.8	1319.7	1311.6	1302.7	1296.8
130°	1381.9	1408.5	1404.9	1400.4	1392.2
132.5°	1477.4	1498.1	1499.6	1489.3	1483.3
135°	1559.6	1582.4	1587.0	1584.7	1578.8
137.5°	1651.3	1669.8	1673.5	1672.0	1663.2
140°	1732.0	1750.6	1760.9	1760.9	1752.8
142.5°	1814.9	1833.4	1839.3	1841.5	1833.4
145°	1893.4	1908.1	1920.0	1922.2	1914.1
147.5°	1963.7	1982.2	1991.1	1994.8	1986.7
150°	2036.2	2048.8	2057.0	2063.6	2057.0
152.5°	2100.6	2113.2	2123.5	2131.7	2123.5
155°	2165.0	2170.9	2177.6	2187.9	2181.3
157.5°	2220.6	2225.0	2228.6	2243.5	2233.1
160°	2270.1	2274.6	2276.8	2289.3	2280.4
162.5°	2316.0	2316.0	2318.3	2332.2	2321.9
165°	2355.2	2353.0	2353.0	2367.8	2357.4
167.5°	2390.8	2384.1	2384.1	2398.9	2388.6
170°	2417.4	2411.5	2409.3	2424.1	2411.5
172.5°	2435.9	2429.9	2427.7	2442.6	2429.9
175°	2450.7	2444.8	2440.4	2455.1	2442.6
177.5°	2458.9	2452.9	2448.5	2461.1	2448.5
180°	2455.1	2455.1	2455.1	2455.1	2455.1



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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	14.58	15.52	15.43	16.39	17.48	10.54	11.48	11.39	12.35	13.44
	3H	16.26	17.10	17.13	17.98	19.10	11.73	12.57	12.60	13.45	14.57
	4H	16.87	17.67	17.75	18.55	19.68	12.18	12.98	13.06	13.86	14.99
	6H	17.30	18.03	18.19	18.92	20.06	12.50	13.24	13.40	14.13	15.26
	8H	17.42	18.12	18.32	19.03	20.17	12.59	13.29	13.50	14.20	15.34
	12H	17.49	18.15	18.39	19.05	20.21	12.64	13.30	13.54	14.20	15.37
4H	2H	14.61	15.41	15.50	16.29	17.41	11.15	11.94	12.03	12.83	13.95
	3H	16.44	17.10	17.34	18.02	19.16	12.50	13.16	13.40	14.08	15.22
	4H	17.14	17.74	18.04	18.65	19.82	13.05	13.65	13.96	14.56	15.73
	6H	17.65	18.17	18.58	19.11	20.28	13.47	13.98	14.39	14.92	16.09
	8H	17.83	18.31	18.75	19.24	20.42	13.59	14.08	14.52	15.01	16.19
	12H	17.93	18.36	18.87	19.31	20.50	13.66	14.09	14.60	15.04	16.23
8H	4H	17.11	17.60	18.04	18.53	19.71	13.33	13.82	14.26	14.75	15.93
	6H	17.68	18.08	18.63	19.05	20.23	13.85	14.25	14.80	15.22	16.40
	8H	17.89	18.24	18.85	19.21	20.40	14.03	14.39	14.99	15.35	16.55
	12H	18.03	18.34	18.99	19.30	20.54	14.15	14.46	15.11	15.42	16.67
12H	4H	17.07	17.50	18.01	18.45	19.64	13.34	13.78	14.29	14.73	15.91
	6H	17.65	18.01	18.61	18.97	20.17	13.90	14.25	14.85	15.21	16.41
	8H	17.87	18.18	18.84	19.14	20.39	14.11	14.42	15.07	15.37	16.62