

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: P917643

Luminaire Tested: DFN2DIP-SQ4F0-070D140US930-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P917643
REPORT IS A COMBINATION OF REPORTS P901708 AND P898471
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-070D140US930-RLLONL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

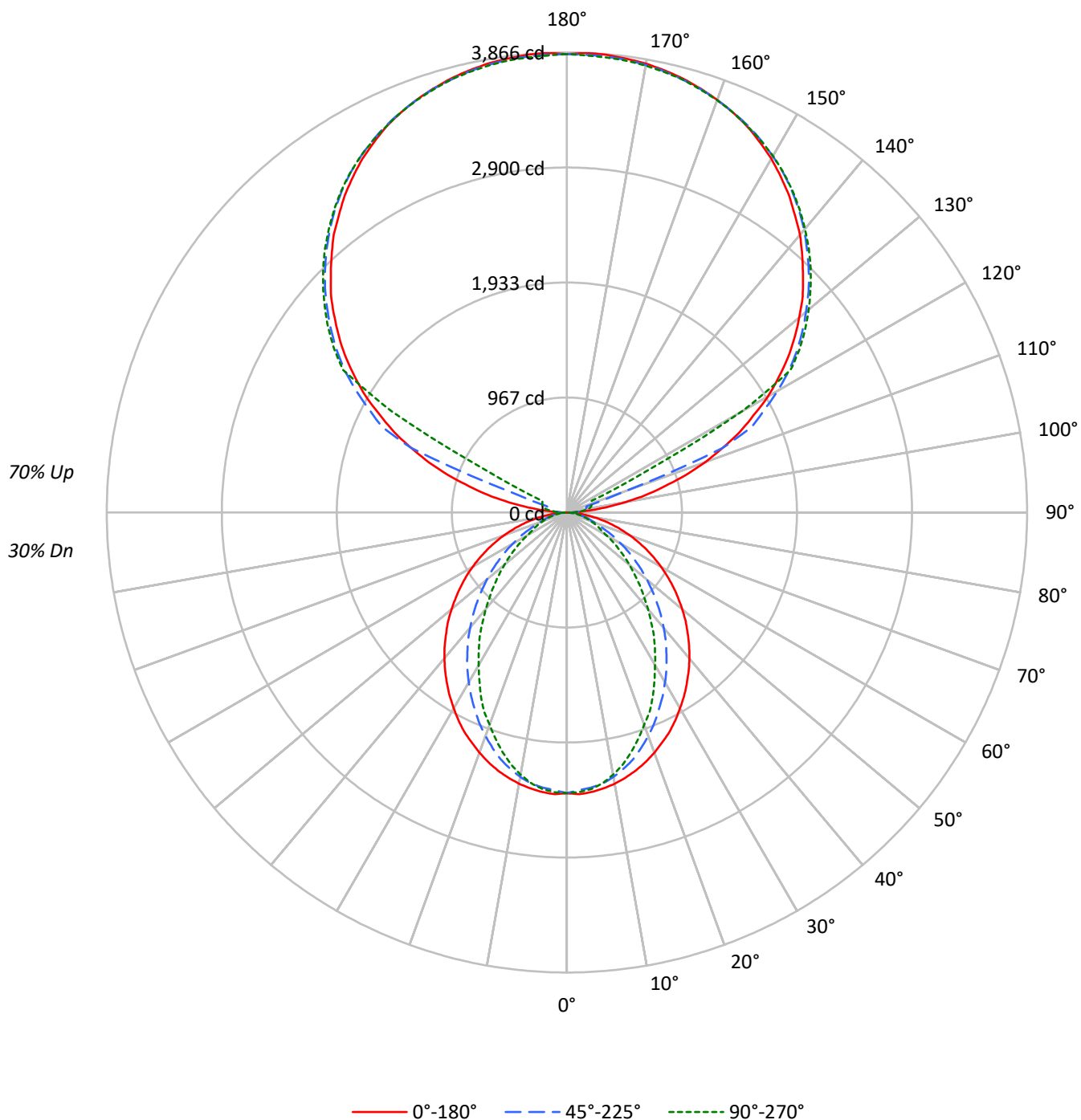
Lumens per Lamp: N/A
Luminaire Lumens: 16151.0 lumens
Efficiency: N/A
Efficacy: 96.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 167.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9967
Total Harmonic Distortion (THDi): 0.063
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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	38	38	38
1	94	90	86	83	84	81	77	75	64	62	60	48	47	46	34	33	32
2	85	78	73	68	76	71	66	62	56	53	50	43	40	39	30	29	28
3	78	69	62	57	70	62	57	52	50	46	42	38	35	33	27	25	24
4	71	61	54	48	64	55	49	44	44	40	36	34	31	28	24	22	21
5	66	55	47	41	59	49	43	38	40	35	31	30	27	25	22	20	18
6	60	49	41	36	54	44	38	33	36	31	27	28	24	22	20	18	16
7	56	44	37	31	50	40	34	29	32	28	24	25	22	19	18	16	15
8	52	40	33	28	46	36	30	25	29	25	21	23	20	17	17	15	13
9	48	37	29	25	43	33	27	23	27	22	19	21	18	15	16	13	12
10	45	33	27	22	40	30	24	20	25	20	17	20	16	14	14	12	11

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1655	1655	1655
5°	1658	1629	1640
10°	1641	1597	1587
15°	1619	1545	1505
20°	1589	1473	1404
25°	1558	1391	1306
30°	1517	1308	1183
35°	1477	1218	1074
40°	1436	1125	949
45°	1388	1022	837
50°	1339	918	726
55°	1287	807	620
60°	1228	691	511
65°	1159	572	460
70°	1076	462	417
75°	972	408	381
80°	821	343	332
85°	571	231	252

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2067 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	221.1	1.4
10°-20°	606.9	3.8
20°-30°	852.0	5.3
30°-40°	928.8	5.8
40°-50°	853.6	5.3
50°-60°	670.4	4.2
60°-70°	436.4	2.7
70°-80°	224.6	1.4
80°-90°	64.1	0.4
90°-100°	127.0	0.8
100°-110°	473.5	2.9
110°-120°	1255.8	7.8
120°-130°	2082.9	12.9
130°-140°	2212.5	13.7
140°-150°	2056.3	12.7
150°-160°	1653.2	10.2
160°-170°	1065.3	6.6
170°-180°	366.7	2.3
0°-30°	1679.9	10.4
0°-40°	2608.7	16.2
0°-60°	4132.7	25.6
0°-90°	4857.8	30.1
90°-120°	1856.4	11.5
90°-150°	8208.1	50.8
90°-180°	11293.0	69.9
0°-180°	16151.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2359	2359	2359	2359	2359	
5°	2359	2348	2320	2340	2333	224
15°	2244	2220	2147	2107	2086	632
25°	2036	1968	1827	1740	1708	937
35°	1755	1646	1458	1324	1276	1098
45°	1434	1291	1067	916	864	1108
55°	1091	924	694	566	525	975
65°	736	564	371	299	292	730
75°	393	243	171	156	154	415
85°	92	47	40	40	40	105
90°	3	33	56	70	75	15
95°	181	89	109	123	120	214
105°	847	931	170	201	212	905
115°	1603	1650	1720	429	229	1578
125°	2266	2302	2355	2375	2383	2021
135°	2804	2849	2874	2902	2896	2166
145°	3253	3250	3297	3317	3303	2035
155°	3582	3557	3590	3607	3585	1650
165°	3774	3758	3766	3785	3766	1066
175°	3860	3841	3846	3866	3838	367
180°	3852	3852	3852	3852	3852	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2358.7	2358.7	2358.7	2358.7	2358.7
2.5°	2369.3	2358.7	2335.2	2356.7	2352.4
5°	2358.7	2348.1	2320.3	2339.5	2333.1
7.5°	2339.5	2326.8	2296.9	2305.3	2294.7
10°	2313.9	2299.0	2256.3	2249.8	2237.1
12.5°	2281.9	2262.7	2205.0	2192.3	2168.7
15°	2243.5	2219.9	2147.4	2106.9	2085.6
17.5°	2198.6	2164.5	2074.8	2027.8	1993.6
20°	2147.4	2104.6	1998.0	1944.7	1897.6
22.5°	2092.0	2042.8	1918.9	1846.4	1814.5
25°	2036.5	1968.0	1827.2	1739.8	1707.6
27.5°	1970.3	1897.6	1741.8	1641.5	1592.4
30°	1899.9	1818.6	1647.8	1539.1	1481.4
32.5°	1831.5	1733.2	1558.4	1430.2	1376.7
35°	1754.7	1645.8	1458.1	1323.6	1276.4
37.5°	1680.0	1562.4	1364.1	1216.6	1163.4
40°	1600.9	1473.0	1265.8	1114.3	1058.7
42.5°	1519.9	1383.3	1167.7	1009.6	956.4
45°	1434.5	1291.4	1067.4	915.7	864.5
47.5°	1353.4	1201.9	971.3	819.6	772.7
50°	1263.7	1112.2	877.3	729.9	685.3
52.5°	1176.1	1015.9	787.7	646.8	606.3
55°	1090.7	924.2	693.7	565.7	525.2
57.5°	1003.3	832.5	610.6	491.0	456.8
60°	913.6	742.8	522.9	414.3	380.0
62.5°	826.1	655.4	448.2	345.8	328.8
65°	736.5	563.5	371.4	299.0	292.4
67.5°	651.1	478.1	299.0	262.4	256.2
70°	561.4	394.9	247.5	226.2	217.6
72.5°	476.1	318.0	207.0	190.0	185.7
75°	392.7	243.2	170.7	155.8	153.8
77.5°	309.6	172.8	134.5	125.9	121.6
80°	232.6	123.8	102.4	94.0	94.0
82.5°	162.2	83.3	70.4	66.1	66.1
85°	91.7	46.9	40.5	40.5	40.5
87.5°	34.2	17.0	17.0	14.9	14.9
90°	2.6	33.4	55.6	69.9	75.2
92.5°	69.9	58.6	66.9	72.5	75.2
95°	181.1	89.0	108.6	122.8	119.8
97.5°	326.0	97.7	142.0	150.6	153.3
100°	493.5	111.5	158.9	181.1	186.7
102.5°	677.2	671.9	164.5	194.9	203.6
105°	847.3	931.1	170.2	200.6	211.8
107.5°	1045.3	1114.8	175.8	206.2	217.4
110°	1234.9	1293.2	487.9	209.2	220.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1413.3	1463.3	1416.0	214.5	223.1
115°	1602.7	1650.0	1719.9	429.3	228.7
117.5°	1767.2	1822.8	1870.5	1471.6	741.4
120°	1951.3	1992.9	2043.2	2076.6	1700.3
122.5°	2107.1	2151.8	2207.7	2224.3	2227.3
125°	2266.0	2302.4	2355.4	2374.9	2383.2
127.5°	2411.0	2450.1	2492.0	2519.8	2522.5
130°	2547.6	2592.4	2622.8	2653.6	2650.9
132.5°	2687.1	2723.4	2753.9	2779.0	2776.4
135°	2804.2	2848.9	2873.7	2901.8	2896.2
137.5°	2926.7	2960.1	2988.2	3016.0	3007.8
140°	3046.5	3069.0	3099.4	3124.6	3110.7
142.5°	3147.1	3166.6	3202.7	3224.9	3211.0
145°	3253.0	3250.0	3297.4	3317.0	3303.0
147.5°	3344.8	3336.4	3383.8	3397.7	3386.7
150°	3434.1	3414.6	3459.2	3475.8	3461.9
152.5°	3509.2	3487.0	3528.8	3545.7	3526.1
155°	3581.7	3556.9	3590.3	3606.9	3584.7
157.5°	3640.3	3618.1	3643.3	3662.8	3640.3
160°	3690.6	3673.7	3690.6	3707.2	3687.7
162.5°	3735.0	3718.4	3732.4	3751.8	3726.7
165°	3774.0	3757.5	3765.8	3785.3	3765.8
167.5°	3804.8	3788.0	3796.5	3816.1	3790.9
170°	3829.9	3813.1	3818.7	3838.3	3813.1
172.5°	3846.5	3829.9	3835.6	3855.1	3829.9
175°	3860.4	3840.9	3846.5	3866.1	3838.3
177.5°	3866.1	3846.5	3849.5	3869.0	3843.9
180°	3852.1	3852.1	3852.1	3852.1	3852.1

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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	6.69	7.38	7.81	8.49	10.02	2.65	3.34	3.77	4.45	5.98
	3H	8.36	8.98	9.48	10.09	11.64	3.83	4.44	4.95	5.56	7.11
	4H	8.96	9.55	10.10	10.67	12.22	4.27	4.86	5.41	5.97	7.53
	6H	9.38	9.92	10.53	11.04	12.61	4.59	5.12	5.73	6.24	7.81
	8H	9.51	10.02	10.65	11.15	12.71	4.67	5.19	5.82	6.32	7.88
	12H	9.57	10.05	10.72	11.18	12.76	4.71	5.20	5.86	6.33	7.91
4H	2H	6.69	7.28	7.83	8.39	9.95	3.23	3.82	4.37	4.93	6.49
	3H	8.51	9.00	9.66	10.14	11.71	4.57	5.06	5.71	6.20	7.76
	4H	9.20	9.65	10.35	10.78	12.37	5.11	5.56	6.26	6.69	8.28
	6H	9.71	10.10	10.87	11.25	12.83	5.52	5.91	6.68	7.06	8.64
	8H	9.89	10.25	11.04	11.39	12.98	5.65	6.01	6.80	7.15	8.75
	12H	9.98	10.30	11.15	11.46	13.06	5.71	6.03	6.88	7.19	8.79
8H	4H	9.16	9.52	10.31	10.66	12.25	5.38	5.74	6.54	6.89	8.48
	6H	9.72	10.02	10.90	11.21	12.80	5.90	6.19	7.07	7.38	8.97
	8H	9.94	10.20	11.12	11.37	12.98	6.09	6.35	7.27	7.51	9.12
	12H	10.08	10.30	11.26	11.47	13.11	6.20	6.43	7.39	7.59	9.24
12H	4H	9.10	9.43	10.27	10.59	12.18	5.38	5.71	6.55	6.86	8.46
	6H	9.70	9.96	10.88	11.12	12.73	5.95	6.21	7.13	7.37	8.98
	8H	9.92	10.14	11.10	11.31	12.95	6.15	6.38	7.34	7.54	9.19

END OF REPORT