

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: P926030

Luminaire Tested: DFN2DIP-SQ4F0-140D100US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P926030
REPORT IS A COMBINATION OF REPORTS P900146 AND P896915
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-140D100US950-RLLFLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

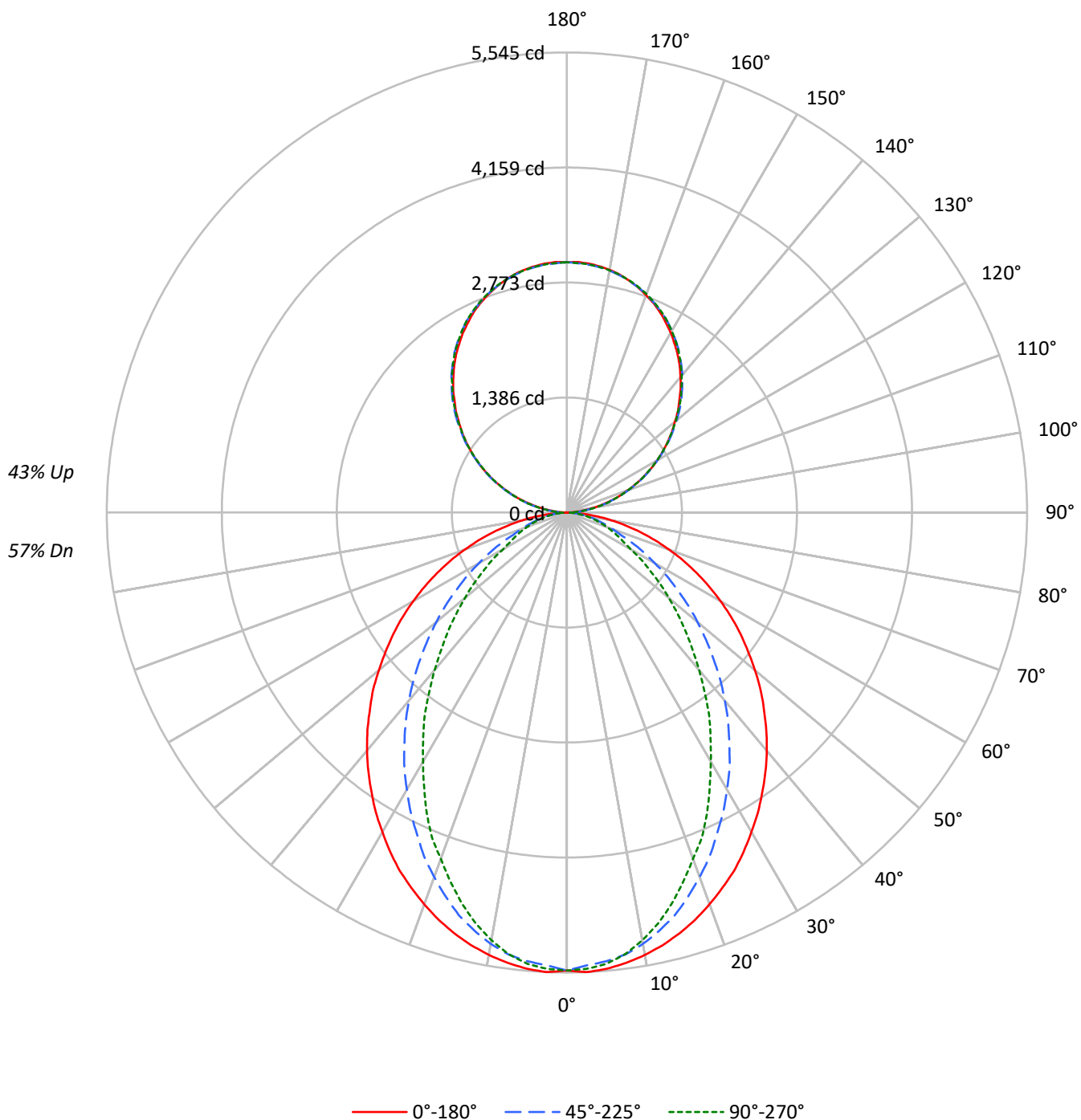
Lumens per Lamp: N/A
Luminaire Lumens: 19795.5 lumens
Efficiency: N/A
Efficacy: 90.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 218.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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	109	109	109	109	101	101	101	101	87	87	87	75	75	75	63	63	63
1	100	96	92	89	93	89	86	83	78	75	73	67	65	63	56	55	54
2	92	84	78	73	85	79	74	69	69	65	61	59	56	54	50	48	47
3	84	75	68	62	78	70	64	59	61	56	52	53	49	46	45	42	40
4	77	66	59	53	72	62	56	50	55	49	45	47	43	40	41	38	35
5	71	60	52	46	66	56	49	44	49	44	39	43	39	35	37	34	31
6	66	54	46	40	61	51	43	38	45	39	35	39	34	31	34	30	28
7	61	49	41	35	57	46	39	34	41	35	31	36	31	28	31	27	25
8	57	44	37	32	53	42	35	30	37	32	28	33	28	25	29	25	22
9	53	41	33	28	49	38	32	27	34	29	25	30	26	23	26	23	20
10	49	37	30	26	46	35	29	25	32	26	23	28	24	21	25	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3873	3873	3873
5°	3879	3813	3837
10°	3841	3739	3714
15°	3788	3616	3522
20°	3718	3446	3286
25°	3646	3256	3058
30°	3550	3061	2768
35°	3456	2851	2514
40°	3360	2634	2222
45°	3248	2392	1958
50°	3133	2149	1699
55°	3013	1889	1451
60°	2873	1616	1195
65°	2713	1339	1077
70°	2519	1081	976
75°	2275	955	891
80°	1922	803	777
85°	1337	540	591

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3248 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	517.3	2.6
10°-20°	1420.2	7.2
20°-30°	1993.9	10.1
30°-40°	2173.5	11.0
40°-50°	1997.7	10.1
50°-60°	1568.9	7.9
60°-70°	1021.2	5.2
70°-80°	525.7	2.7
80°-90°	142.8	0.7
90°-100°	186.7	0.9
100°-110°	593.2	3.0
110°-120°	1015.2	5.1
120°-130°	1335.1	6.7
130°-140°	1498.6	7.6
140°-150°	1469.5	7.4
150°-160°	1232.7	6.2
160°-170°	817.5	4.1
170°-180°	285.7	1.4
0°-30°	3931.5	19.9
0°-40°	6105.0	30.8
0°-60°	9671.6	48.9
0°-90°	11361.2	57.4
90°-120°	1795.1	9.1
90°-150°	6098.3	30.8
90°-180°	8434.0	42.6
0°-180°	19795.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	5520	5520	5520	5520	5520	
5°	5520	5495	5430	5475	5460	523
15°	5250	5195	5026	4931	4881	1479
25°	4766	4606	4276	4072	3996	2192
35°	4106	3852	3412	3097	2987	2570
45°	3357	3022	2498	2143	2023	2593
55°	2552	2163	1623	1324	1229	2281
65°	1724	1319	869	700	684	1709
75°	919	569	400	365	360	972
85°	215	110	95	95	95	246
90°	3	33	89	84	86	19
95°	133	158	163	163	158	148
105°	548	555	560	565	565	578
115°	1019	1033	1029	1026	1019	1008
125°	1482	1504	1497	1489	1486	1324
135°	1916	1945	1950	1948	1940	1481
145°	2327	2345	2360	2362	2352	1454
155°	2661	2668	2676	2689	2680	1225
165°	2894	2892	2892	2910	2897	817
175°	3012	3004	2999	3017	3002	286
180°	3017	3017	3017	3017	3017	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	5520.0	5520.0	5520.0	5520.0	5520.0
2.5°	5544.9	5520.0	5464.9	5515.3	5505.2
5°	5520.0	5495.1	5429.9	5475.0	5460.1
7.5°	5475.0	5445.2	5375.3	5395.0	5370.1
10°	5415.1	5380.1	5280.5	5265.0	5235.4
12.5°	5340.3	5295.3	5160.1	5130.4	5075.4
15°	5250.2	5195.1	5025.5	4930.7	4880.9
17.5°	5145.3	5065.3	4855.4	4745.7	4665.6
20°	5025.5	4925.3	4675.7	4551.2	4441.0
22.5°	4895.6	4780.7	4490.8	4321.1	4246.4
25°	4765.8	4605.7	4276.1	4071.5	3996.2
27.5°	4611.1	4441.0	4076.3	3841.5	3726.5
30°	4446.2	4256.0	3856.4	3601.9	3466.7
32.5°	4286.1	4056.1	3647.0	3347.0	3221.9
35°	4106.5	3851.6	3412.2	3097.4	2987.1
37.5°	3931.6	3656.5	3192.2	2847.2	2722.6
40°	3746.6	3447.2	2962.2	2607.7	2477.8
42.5°	3556.9	3237.3	2732.7	2362.8	2238.2
45°	3357.0	3022.1	2498.0	2142.8	2023.1
47.5°	3167.3	2812.8	2273.2	1918.1	1808.4
50°	2957.4	2602.9	2053.2	1708.2	1603.8
52.5°	2752.3	2377.6	1843.3	1513.7	1418.8
55°	2552.5	2162.9	1623.4	1324.0	1229.0
57.5°	2347.9	1948.3	1428.9	1149.1	1069.1
60°	2138.0	1738.4	1223.8	969.4	889.3
62.5°	1933.5	1533.8	1048.9	809.3	769.6
65°	1723.6	1318.6	869.2	699.6	684.2
67.5°	1523.7	1118.9	699.6	614.3	599.4
70°	1313.8	924.3	579.3	529.5	509.3
72.5°	1114.1	744.1	484.4	444.7	434.6
75°	919.0	569.3	399.6	364.6	359.8
77.5°	724.6	404.4	314.8	294.7	284.6
80°	544.4	289.9	239.5	220.0	220.0
82.5°	379.5	195.0	164.9	154.7	154.7
85°	214.6	109.7	94.8	94.8	94.8
87.5°	80.0	39.8	39.8	35.0	35.0
90°	2.8	32.7	89.1	83.7	86.4
92.5°	56.4	76.4	79.2	81.9	81.9
95°	132.8	158.3	162.8	162.8	158.3
97.5°	221.0	244.7	254.7	254.7	254.7
100°	322.9	343.8	351.1	351.1	348.4
102.5°	430.3	445.7	455.7	458.4	455.7
105°	547.6	554.8	560.3	564.9	564.9
107.5°	664.0	675.0	675.0	676.8	664.0
110°	776.8	791.3	791.3	791.3	784.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	898.7	914.1	911.5	904.1	898.7
115°	1018.8	1033.3	1028.8	1026.0	1018.8
117.5°	1137.9	1158.0	1145.2	1137.9	1130.6
120°	1257.9	1278.0	1257.9	1257.9	1249.8
122.5°	1367.1	1392.6	1379.9	1372.6	1367.1
125°	1481.8	1504.5	1497.2	1489.0	1486.3
127.5°	1593.7	1621.8	1611.8	1600.9	1593.7
130°	1698.2	1730.9	1726.5	1720.9	1711.0
132.5°	1815.6	1841.0	1842.8	1830.2	1822.8
135°	1916.5	1944.7	1950.2	1947.5	1940.1
137.5°	2029.3	2052.1	2056.6	2054.8	2043.8
140°	2128.5	2151.2	2164.0	2164.0	2153.9
142.5°	2230.4	2253.1	2260.3	2263.1	2253.1
145°	2326.7	2344.9	2359.5	2362.2	2352.2
147.5°	2413.1	2435.9	2446.8	2451.4	2441.4
150°	2502.3	2517.8	2527.8	2535.9	2527.8
152.5°	2581.4	2596.9	2609.7	2619.7	2609.7
155°	2660.6	2667.9	2676.1	2688.8	2680.5
157.5°	2728.8	2734.3	2738.8	2757.0	2744.3
160°	2789.8	2795.2	2797.9	2813.3	2802.5
162.5°	2846.2	2846.2	2848.8	2866.1	2853.4
165°	2894.3	2891.6	2891.6	2909.8	2897.1
167.5°	2938.0	2929.8	2929.8	2948.1	2935.3
170°	2970.8	2963.5	2960.7	2979.0	2963.5
172.5°	2993.5	2986.2	2983.4	3001.7	2986.2
175°	3011.7	3004.4	2999.0	3017.1	3001.7
177.5°	3021.7	3014.4	3008.9	3024.4	3008.9
180°	3017.1	3017.1	3017.1	3017.1	3017.1

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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	12.53	13.42	13.42	14.33	15.50	8.49	9.38	9.39	10.30	11.46
	3H	14.21	15.01	15.12	15.94	17.13	9.68	10.48	10.59	11.40	12.59
	4H	14.83	15.58	15.75	16.51	17.71	10.14	10.89	11.06	11.82	13.02
	6H	15.26	15.95	16.19	16.89	18.10	10.46	11.16	11.40	12.09	13.30
	8H	15.39	16.05	16.33	17.00	18.21	10.55	11.21	11.50	12.17	13.38
	12H	15.45	16.08	16.40	17.03	18.26	10.60	11.23	11.55	12.17	13.41
4H	2H	12.55	13.31	13.48	14.24	15.44	9.09	9.85	10.02	10.78	11.98
	3H	14.39	15.02	15.33	15.98	17.19	10.45	11.08	11.39	12.04	13.25
	4H	15.09	15.66	16.04	16.62	17.85	11.00	11.57	11.95	12.53	13.77
	6H	15.61	16.11	16.58	17.08	18.32	11.43	11.92	12.39	12.89	14.13
	8H	15.79	16.25	16.76	17.22	18.47	11.56	12.02	12.52	12.99	14.24
	12H	15.89	16.31	16.88	17.29	18.55	11.62	12.04	12.61	13.03	14.28
8H	4H	15.06	15.52	16.03	16.49	17.75	11.29	11.75	12.25	12.72	13.97
	6H	15.64	16.02	16.63	17.03	18.28	11.81	12.19	12.80	13.20	14.45
	8H	15.86	16.19	16.86	17.19	18.46	12.00	12.34	13.00	13.34	14.61
	12H	16.00	16.30	17.00	17.29	18.61	12.13	12.42	13.13	13.41	14.73
12H	4H	15.02	15.43	16.00	16.42	17.68	11.30	11.71	12.28	12.70	13.96
	6H	15.61	15.95	16.61	16.95	18.22	11.86	12.20	12.86	13.20	14.47
	8H	15.84	16.13	16.84	17.13	18.44	12.08	12.37	13.08	13.36	14.68

END OF REPORT