

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: P926046

Luminaire Tested: DFN2DIP-SQ4F0-140D160US950-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P926046
REPORT IS A COMBINATION OF REPORTS P900218 AND P896915
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-140D160US950-RLLFLL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

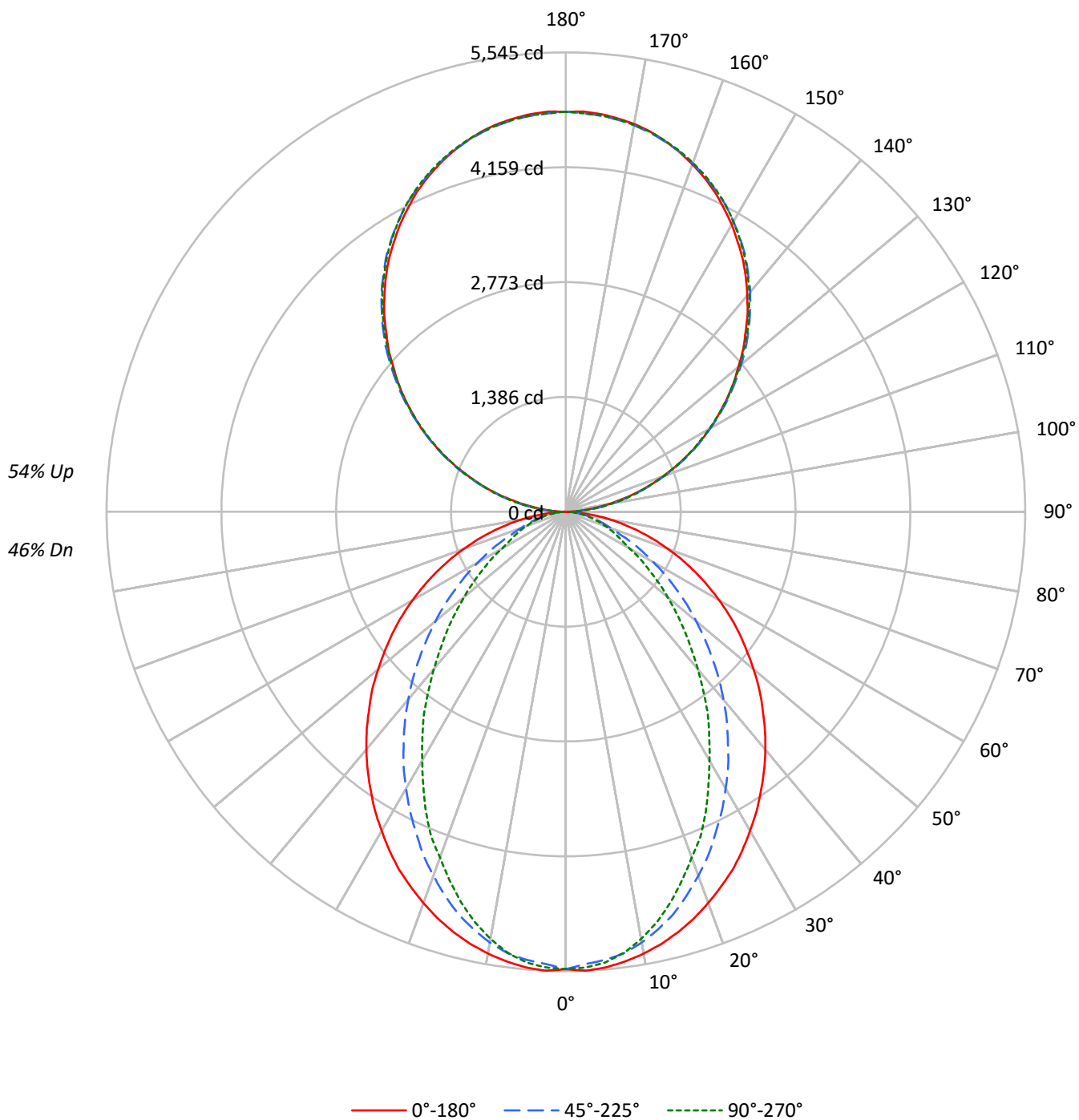
Lumens per Lamp: N/A
Luminaire Lumens: 24862.1 lumens
Efficiency: N/A
Efficacy: 93.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 265.9
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

TEST NUMBER: P926046

CATALOG NUMBER: DFN2DIP-SQ4F0-140D160US950-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P926046

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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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52
1	97	93	89	86	89	86	82	80	72	69	67	59	57	56	47	46	45
2	89	82	76	71	81	75	70	66	63	60	56	52	49	47	42	40	38
3	81	72	65	60	74	67	61	56	56	52	48	46	43	40	37	35	33
4	75	64	57	51	68	59	53	48	50	45	41	42	38	35	34	31	29
5	69	57	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26
6	63	52	44	38	58	48	41	36	41	35	31	34	30	27	28	25	23
7	59	47	39	34	54	43	37	32	37	32	28	31	27	24	26	23	20
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	18
9	51	39	32	27	47	36	30	25	31	26	22	26	22	20	22	19	17
10	47	36	29	24	44	33	27	23	29	24	20	24	20	18	20	17	15

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: 90°

Vertical Angle: 90°

Luminance: 3798 cd/sqm

TEST NUMBER: P926046

CATALOG NUMBER: DFN2DIP-SQ4F0-140D160US950-RLFL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	517.3	2.1
10°-20°	1420.2	5.7
20°-30°	1993.9	8.0
30°-40°	2173.5	8.7
40°-50°	1997.7	8.0
50°-60°	1568.9	6.3
60°-70°	1021.2	4.1
70°-80°	525.7	2.1
80°-90°	147.9	0.6
90°-100°	298.7	1.2
100°-110°	949.2	3.8
110°-120°	1624.4	6.5
120°-130°	2136.3	8.6
130°-140°	2397.9	9.6
140°-150°	2351.4	9.5
150°-160°	1972.5	7.9
160°-170°	1308.1	5.3
170°-180°	457.2	1.8
0°-30°	3931.5	15.8
0°-40°	6105.0	24.6
0°-60°	9671.6	38.9
0°-90°	11366.3	45.7
90°-120°	2872.3	11.6
90°-150°	9757.9	39.2
90°-180°	13496.0	54.3
0°-180°	24862.1	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°	4	52	143	134	138	25
95°	212	253	260	260	253	236
105°	876	888	897	904	904	925
115°	1630	1653	1646	1642	1630	1612
125°	2371	2407	2396	2383	2378	2119
135°	3067	3112	3120	3116	3104	2370
145°	3723	3752	3776	3780	3764	2326
155°	4257	4269	4282	4302	4289	1960
165°	4631	4627	4627	4656	4636	1306
175°	4819	4807	4799	4828	4803	458
180°	4828	4828	4828	4828	4828	

TEST NUMBER: P926046

CATALOG NUMBER: DFN2DIP-SQ4F0-140D160US950-RLFL

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°	4.4	52.4	142.6	133.9	138.2
92.5°	90.2	122.3	126.6	131.0	131.0
95°	212.5	253.3	260.5	260.5	253.3
97.5°	353.6	391.5	407.5	407.5	407.5
100°	516.7	550.2	561.8	561.8	557.4
102.5°	688.4	713.2	729.1	733.5	729.1
105°	876.2	887.8	896.6	903.8	903.8
107.5°	1062.5	1079.9	1079.9	1082.9	1062.5
110°	1243.0	1266.2	1266.2	1266.2	1254.6

TEST NUMBER: P926046

CATALOG NUMBER: DFN2DIP-SQ4F0-140D160US950-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1438.0	1462.8	1458.4	1446.7	1438.0
115°	1630.1	1653.4	1646.1	1641.7	1630.1
117.5°	1820.8	1852.8	1832.4	1820.8	1809.2
120°	2012.9	2044.9	2012.9	2012.9	1999.8
122.5°	2187.5	2228.4	2207.9	2196.3	2187.5
125°	2371.0	2407.3	2395.7	2382.6	2378.2
127.5°	2549.9	2595.1	2579.0	2561.6	2549.9
130°	2717.4	2769.7	2762.5	2753.7	2737.7
132.5°	2905.1	2945.9	2948.7	2928.4	2916.8
135°	3066.6	3111.8	3120.5	3116.1	3104.5
137.5°	3247.1	3283.5	3290.8	3287.9	3270.4
140°	3405.8	3442.1	3462.5	3462.5	3446.5
142.5°	3568.8	3605.2	3616.8	3621.2	3605.2
145°	3723.1	3752.2	3775.5	3779.8	3763.8
147.5°	3861.3	3897.8	3915.2	3922.5	3906.4
150°	4003.9	4028.7	4044.8	4057.8	4044.8
152.5°	4130.6	4155.3	4175.8	4191.7	4175.8
155°	4257.2	4268.9	4281.9	4302.3	4289.3
157.5°	4366.4	4375.1	4382.4	4411.5	4391.2
160°	4463.9	4472.6	4477.0	4501.7	4484.3
162.5°	4554.1	4554.1	4558.5	4586.2	4565.7
165°	4631.3	4626.9	4626.9	4656.0	4635.7
167.5°	4701.1	4688.1	4688.1	4717.1	4696.7
170°	4753.5	4741.9	4737.6	4766.7	4741.9
172.5°	4789.9	4778.3	4773.9	4803.0	4778.3
175°	4819.0	4807.4	4798.6	4827.8	4803.0
177.5°	4835.1	4823.4	4814.6	4839.5	4814.6
180°	4827.8	4827.8	4827.8	4827.8	4827.8

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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	11.45	12.25	12.45	13.25	14.58	7.41	8.21	8.41	9.21	10.55
	3H	13.13	13.84	14.14	14.86	16.21	8.60	9.31	9.61	10.32	11.68
	4H	13.74	14.41	14.76	15.43	16.79	9.05	9.72	10.07	10.74	12.10
	6H	14.16	14.78	15.19	15.80	17.18	9.37	9.99	10.40	11.01	12.38
	8H	14.29	14.88	15.33	15.92	17.29	9.46	10.04	10.49	11.08	12.45
	12H	14.35	14.91	15.39	15.94	17.34	9.50	10.06	10.54	11.09	12.48
4H	2H	11.46	12.14	12.49	13.15	14.52	8.00	8.68	9.03	9.70	11.06
	3H	13.29	13.85	14.33	14.90	16.28	9.35	9.91	10.39	10.96	12.33
	4H	13.99	14.50	15.03	15.54	16.94	9.90	10.41	10.94	11.45	12.85
	6H	14.51	14.95	15.56	16.01	17.40	10.32	10.76	11.37	11.82	13.21
	8H	14.68	15.09	15.74	16.15	17.56	10.45	10.86	11.50	11.91	13.32
	12H	14.78	15.15	15.85	16.22	17.63	10.51	10.88	11.58	11.95	13.36
8H	4H	13.95	14.36	15.01	15.42	16.83	10.18	10.59	11.23	11.64	13.05
	6H	14.52	14.86	15.60	15.96	17.36	10.70	11.04	11.77	12.13	13.54
	8H	14.74	15.04	15.83	16.12	17.55	10.89	11.19	11.97	12.27	13.69
	12H	14.88	15.14	15.97	16.22	17.69	11.01	11.27	12.09	12.34	13.81
12H	4H	13.90	14.27	14.98	15.34	16.76	10.18	10.55	11.25	11.62	13.04
	6H	14.50	14.80	15.58	15.88	17.30	10.75	11.05	11.83	12.13	13.55
	8H	14.72	14.98	15.81	16.06	17.52	10.96	11.22	12.05	12.29	13.76

END OF REPORT