

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: P914975

Luminaire Tested: DFN2DIP-SQ4F0-090D100US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P914975
REPORT IS A COMBINATION OF REPORTS P901658 AND P898471
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ4F0-090D100US927-RLLONL
Description: 4 foot, Square Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

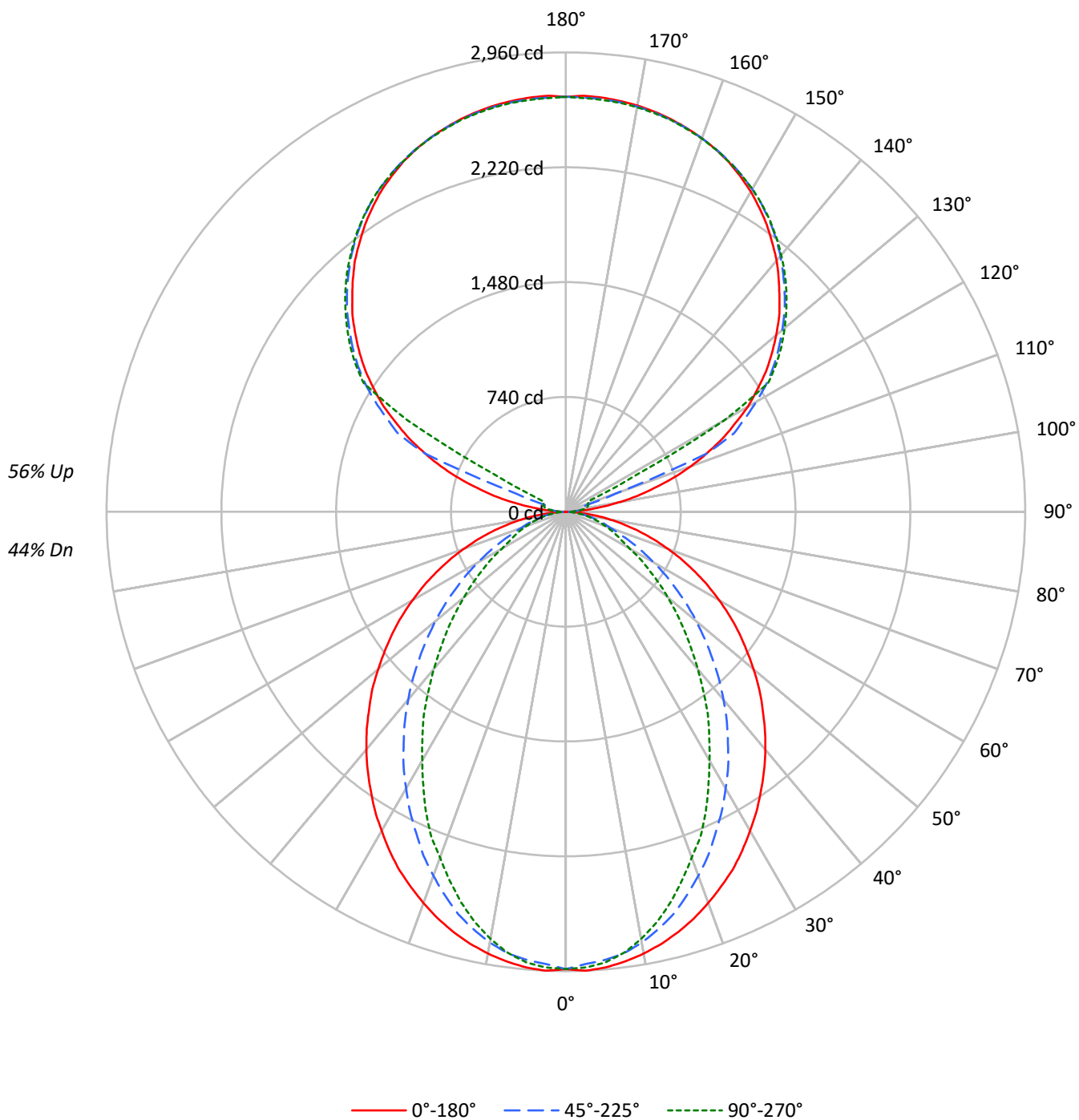
Lumens per Lamp: N/A
Luminaire Lumens: 13902.8 lumens
Efficiency: N/A
Efficacy: 88.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.92' x L: 3.92' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 157.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
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	106	106	106	106	97	97	97	97	80	80	80	64	64	64	50	50	50
1	97	93	89	86	88	85	82	79	71	68	66	57	56	54	45	44	43
2	88	81	76	71	81	75	70	65	62	59	56	51	48	46	40	39	37
3	81	72	65	59	74	66	60	55	55	51	47	45	42	39	36	34	32
4	74	64	56	50	68	59	52	47	49	44	41	41	37	34	32	30	28
5	68	57	49	43	62	53	46	41	44	39	35	37	33	30	29	27	25
6	63	51	43	38	58	47	41	36	40	35	31	33	29	26	27	24	22
7	58	46	39	33	53	43	36	31	36	31	27	30	26	23	25	22	20
8	54	42	35	30	50	39	32	28	33	28	24	28	24	21	23	20	18
9	50	39	31	26	46	36	29	25	31	25	22	26	22	19	21	18	16
10	47	35	28	24	43	33	27	22	28	23	20	24	20	17	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2068	2068	2068
5°	2071	2035	2048
10°	2050	1996	1982
15°	2022	1930	1880
20°	1985	1840	1754
25°	1947	1738	1632
30°	1895	1634	1478
35°	1845	1522	1342
40°	1794	1406	1186
45°	1734	1277	1045
50°	1672	1147	907
55°	1608	1008	774
60°	1534	863	638
65°	1448	715	575
70°	1345	577	521
75°	1214	510	475
80°	1026	429	414
85°	714	288	315

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1734 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	276.2	2.0
10°-20°	758.1	5.5
20°-30°	1064.4	7.7
30°-40°	1160.3	8.3
40°-50°	1066.4	7.7
50°-60°	837.5	6.0
60°-70°	545.1	3.9
70°-80°	280.6	2.0
80°-90°	76.3	0.5
90°-100°	88.1	0.6
100°-110°	328.6	2.4
110°-120°	871.6	6.3
120°-130°	1445.6	10.4
130°-140°	1535.6	11.0
140°-150°	1427.1	10.3
150°-160°	1147.4	8.3
160°-170°	739.3	5.3
170°-180°	254.5	1.8
0°-30°	2098.7	15.1
0°-40°	3258.9	23.4
0°-60°	5162.8	37.1
0°-90°	6064.9	43.6
90°-120°	1288.4	9.3
90°-150°	5696.7	41.0
90°-180°	7838.0	56.4
0°-180°	13902.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2947	2947	2947	2947	2947	
5°	2947	2933	2899	2923	2915	279
15°	2803	2773	2683	2632	2606	790
25°	2544	2459	2283	2173	2133	1170
35°	2192	2056	1822	1653	1595	1372
45°	1792	1613	1333	1144	1080	1384
55°	1363	1155	867	707	656	1218
65°	920	704	464	373	365	912
75°	491	304	213	195	192	519
85°	114	58	51	51	51	132
90°	2	23	39	48	52	13
95°	126	62	75	85	83	149
105°	588	646	118	139	147	628
115°	1112	1145	1194	298	159	1095
125°	1573	1598	1635	1648	1654	1403
135°	1946	1977	1994	2014	2010	1503
145°	2258	2256	2288	2302	2292	1412
155°	2486	2469	2492	2503	2488	1146
165°	2619	2608	2614	2627	2614	740
175°	2679	2666	2670	2683	2664	255
180°	2674	2674	2674	2674	2674	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2946.7	2946.7	2946.7	2946.7	2946.7
2.5°	2960.0	2946.7	2917.2	2944.1	2938.8
5°	2946.7	2933.4	2898.6	2922.6	2914.7
7.5°	2922.6	2906.8	2869.4	2879.9	2866.6
10°	2890.7	2872.0	2818.8	2810.6	2794.7
12.5°	2850.7	2826.7	2754.6	2738.7	2709.3
15°	2802.7	2773.3	2682.7	2632.0	2605.5
17.5°	2746.7	2704.0	2591.9	2533.3	2490.6
20°	2682.7	2629.2	2495.9	2429.5	2370.6
22.5°	2613.4	2552.0	2397.2	2306.7	2266.8
25°	2544.1	2458.6	2282.7	2173.4	2133.3
27.5°	2461.5	2370.6	2176.0	2050.6	1989.2
30°	2373.5	2271.9	2058.6	1922.8	1850.6
32.5°	2288.0	2165.2	1946.8	1786.7	1719.9
35°	2192.1	2056.0	1821.5	1653.4	1594.6
37.5°	2098.7	1951.9	1704.1	1519.9	1453.4
40°	2000.0	1840.2	1581.3	1392.0	1322.7
42.5°	1898.7	1728.1	1458.7	1261.3	1194.8
45°	1792.1	1613.3	1333.4	1143.8	1079.9
47.5°	1690.8	1501.5	1213.5	1023.9	965.4
50°	1578.7	1389.4	1096.1	911.9	856.1
52.5°	1469.3	1269.2	984.0	808.0	757.4
55°	1362.6	1154.6	866.6	706.8	656.1
57.5°	1253.4	1040.1	762.8	613.4	570.7
60°	1141.3	928.0	653.3	517.5	474.8
62.5°	1032.1	818.8	559.9	432.1	410.8
65°	920.0	703.9	464.0	373.4	365.3
67.5°	813.4	597.2	373.4	327.9	320.0
70°	701.4	493.4	309.3	282.7	271.9
72.5°	594.7	397.2	258.6	237.3	232.0
75°	490.6	303.9	213.3	194.6	192.1
77.5°	386.7	215.9	168.0	157.3	151.9
80°	290.6	154.8	127.9	117.4	117.4
82.5°	202.6	104.1	88.0	82.6	82.6
85°	114.5	58.5	50.6	50.6	50.6
87.5°	42.7	21.2	21.2	18.7	18.7
90°	1.8	23.2	38.6	48.5	52.1
92.5°	48.5	40.6	46.4	50.3	52.1
95°	125.6	61.8	75.3	85.2	83.2
97.5°	226.2	67.7	98.5	104.5	106.4
100°	342.5	77.4	110.3	125.6	129.6
102.5°	470.0	466.4	114.2	135.3	141.2
105°	588.1	646.2	118.1	139.2	147.0
107.5°	725.5	773.7	122.0	143.1	150.9
110°	857.1	897.5	338.6	145.2	152.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	980.9	1015.6	982.8	148.9	154.9
115°	1112.3	1145.2	1193.7	297.9	158.8
117.5°	1226.5	1265.1	1298.1	1021.4	514.6
120°	1354.2	1383.1	1418.1	1441.3	1180.1
122.5°	1462.4	1493.4	1532.2	1543.7	1545.8
125°	1572.7	1598.0	1634.7	1648.3	1654.0
127.5°	1673.3	1700.4	1729.6	1748.9	1750.7
130°	1768.1	1799.2	1820.4	1841.7	1839.8
132.5°	1864.9	1890.1	1911.3	1928.7	1926.9
135°	1946.2	1977.2	1994.5	2014.0	2010.1
137.5°	2031.2	2054.4	2073.9	2093.3	2087.5
140°	2114.3	2130.0	2151.1	2168.6	2158.9
142.5°	2184.2	2197.7	2222.8	2238.1	2228.6
145°	2257.7	2255.7	2288.5	2302.1	2292.4
147.5°	2321.3	2315.6	2348.4	2358.1	2350.6
150°	2383.4	2369.8	2400.9	2412.4	2402.7
152.5°	2435.5	2420.1	2449.1	2460.8	2447.2
155°	2485.9	2468.6	2491.8	2503.3	2487.9
157.5°	2526.5	2511.1	2528.6	2542.1	2526.5
160°	2561.4	2549.7	2561.4	2572.9	2559.4
162.5°	2592.2	2580.7	2590.4	2603.9	2586.5
165°	2619.3	2607.8	2613.6	2627.1	2613.6
167.5°	2640.7	2628.9	2635.0	2648.5	2631.0
170°	2658.1	2646.4	2650.3	2663.9	2646.4
172.5°	2669.6	2658.1	2662.0	2675.6	2658.1
175°	2679.2	2665.7	2669.6	2683.2	2663.9
177.5°	2683.2	2669.6	2671.7	2685.3	2667.7
180°	2673.5	2673.5	2673.5	2673.5	2673.5

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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	9.06	9.84	10.07	10.86	12.22	5.02	5.80	6.03	6.82	8.18
	3H	10.74	11.43	11.76	12.46	13.85	6.20	6.90	7.23	7.93	9.31
	4H	11.34	12.01	12.38	13.04	14.43	6.65	7.31	7.69	8.35	9.74
	6H	11.77	12.38	12.82	13.41	14.81	6.97	7.58	8.02	8.62	10.02
	8H	11.89	12.47	12.95	13.53	14.92	7.06	7.64	8.11	8.69	10.09
	12H	11.96	12.51	13.02	13.55	14.97	7.10	7.65	8.16	8.70	10.12
4H	2H	9.07	9.73	10.12	10.76	12.15	5.61	6.27	6.66	7.30	8.69
	3H	10.90	11.45	11.95	12.51	13.91	6.96	7.51	8.01	8.57	9.97
	4H	11.59	12.10	12.65	13.15	14.57	7.50	8.01	8.56	9.06	10.48
	6H	12.11	12.54	13.18	13.62	15.04	7.92	8.35	8.99	9.43	10.85
	8H	12.29	12.69	13.36	13.76	15.19	8.05	8.45	9.12	9.52	10.95
	12H	12.38	12.75	13.47	13.83	15.27	8.11	8.48	9.20	9.56	11.00
8H	4H	11.56	11.96	12.63	13.03	14.46	7.78	8.18	8.85	9.25	10.69
	6H	12.13	12.46	13.22	13.57	15.00	8.30	8.63	9.39	9.74	11.17
	8H	12.35	12.64	13.44	13.73	15.18	8.49	8.78	9.59	9.88	11.33
	12H	12.49	12.74	13.59	13.83	15.32	8.61	8.87	9.71	9.95	11.45
12H	4H	11.51	11.87	12.59	12.95	14.39	7.79	8.15	8.87	9.23	10.67
	6H	12.10	12.39	13.20	13.49	14.94	8.35	8.64	9.45	9.73	11.19
	8H	12.32	12.58	13.42	13.67	15.16	8.56	8.82	9.66	9.90	11.40

END OF REPORT