

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: P922693

Luminaire Tested: DFN2DIP-SQ2F0-080D050US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P922693
REPORT IS A COMBINATION OF REPORTS P901325 AND P898215
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-SQ2F0-080D050US940-FLLONL
Description: 2 foot, Square Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

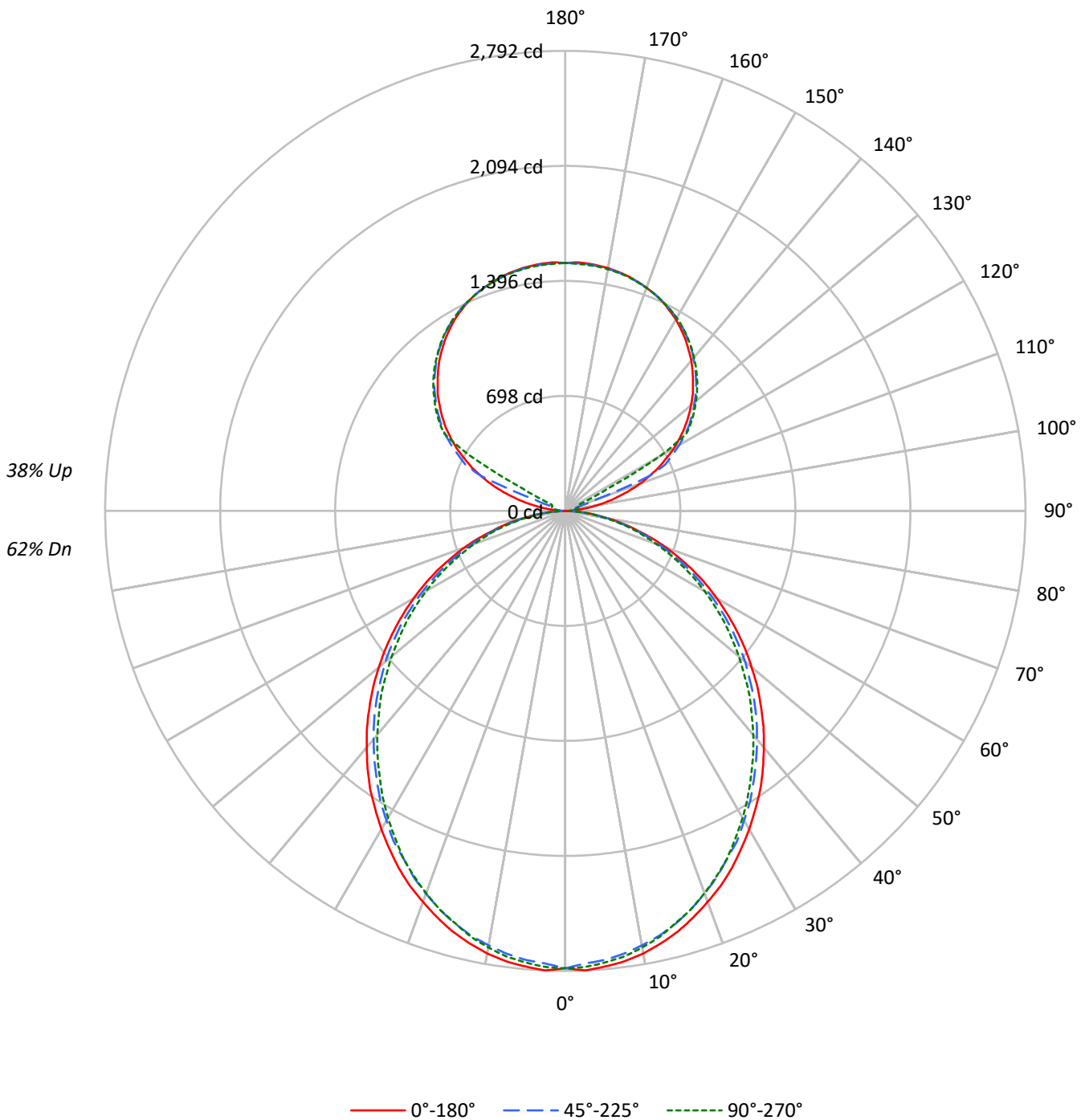
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11476.4 lumens
Efficiency: N/A
Efficacy: 98.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.21' x L: 2.21' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 116.4
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	0
RCR																		
0	110	110	110	110	103	103	103	103	90	90	90	78	78	78	67	67	67	62
1	100	96	92	88	94	90	87	83	79	76	74	69	67	65	59	58	56	52
2	91	84	78	72	85	79	73	69	69	65	61	60	57	54	52	50	48	43
3	83	74	66	60	78	69	63	57	61	56	51	53	49	46	46	43	40	37
4	76	65	57	51	71	61	54	49	54	48	44	47	43	39	41	38	35	32
5	70	58	50	44	65	55	47	42	49	43	38	43	38	34	37	33	30	27
6	65	52	44	38	60	49	42	36	44	38	33	39	34	30	34	30	27	24
7	60	47	39	34	56	45	37	32	40	34	29	35	30	27	31	27	24	21
8	56	43	35	30	52	41	34	29	36	30	26	32	27	24	28	24	21	19
9	52	39	32	27	49	37	30	26	33	28	23	30	25	21	26	22	19	17
10	49	36	29	24	45	34	28	23	31	25	21	27	23	19	24	20	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6103	6103	6103
5°	6103	6005	6051
10°	6043	5911	5960
15°	5943	5801	5824
20°	5813	5652	5684
25°	5683	5478	5524
30°	5522	5314	5323
35°	5368	5123	5111
40°	5182	4930	4909
45°	4995	4735	4701
50°	4791	4530	4462
55°	4576	4295	4239
60°	4332	4016	3985
65°	4065	3725	3685
70°	3725	3371	3359
75°	3259	2947	3047
80°	2692	2406	2474
85°	1818	1519	1555

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4995 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	261.3	2.3
10°-20°	735.1	6.4
20°-30°	1080.3	9.4
30°-40°	1254.7	10.9
40°-50°	1253.1	10.9
50°-60°	1092.7	9.5
60°-70°	807.7	7.0
70°-80°	457.0	4.0
80°-90°	123.3	1.1
90°-100°	49.6	0.4
100°-110°	185.0	1.6
110°-120°	490.6	4.3
120°-130°	813.6	7.1
130°-140°	864.3	7.5
140°-150°	803.2	7.0
150°-160°	645.8	5.6
160°-170°	416.1	3.6
170°-180°	143.2	1.2
0°-30°	2076.6	18.1
0°-40°	3331.3	29.0
0°-60°	5677.0	49.5
0°-90°	7065.0	61.6
90°-120°	725.2	6.3
90°-150°	3206.2	27.9
90°-180°	4411.0	38.4
0°-180°	11476.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2776	2776	2776	2776	2776	
5°	2776	2765	2736	2757	2752	263
15°	2642	2626	2592	2602	2589	744
25°	2392	2370	2325	2330	2325	1100
35°	2063	2037	1994	1978	1964	1288
45°	1679	1660	1620	1591	1580	1296
55°	1271	1254	1222	1190	1177	1136
65°	857	841	814	790	777	847
75°	448	443	430	414	419	479
85°	109	107	104	96	94	122
90°	1	13	22	27	29	11
95°	71	35	42	48	47	84
105°	331	364	66	78	83	354
115°	626	644	672	168	89	616
125°	885	899	920	928	931	789
135°	1095	1113	1122	1134	1131	846
145°	1271	1270	1288	1296	1290	795
155°	1399	1389	1402	1409	1400	645
165°	1474	1468	1471	1478	1471	416
175°	1508	1500	1502	1510	1499	144
180°	1505	1505	1505	1505	1505	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2775.7	2775.7	2775.7	2775.7	2775.7
2.5°	2791.9	2778.6	2749.1	2775.7	2770.6
5°	2775.7	2765.3	2735.9	2757.1	2752.0
7.5°	2757.1	2741.2	2711.8	2733.3	2727.9
10°	2727.9	2709.2	2677.2	2698.4	2690.6
12.5°	2687.7	2671.8	2639.8	2653.1	2647.8
15°	2642.4	2626.5	2591.7	2602.5	2589.2
17.5°	2586.3	2570.4	2535.6	2549.0	2535.6
20°	2524.9	2509.0	2471.6	2479.6	2469.1
22.5°	2463.7	2439.6	2404.8	2404.8	2399.4
25°	2391.5	2370.3	2325.0	2330.0	2325.0
27.5°	2311.3	2292.7	2258.1	2250.1	2236.9
30°	2231.5	2209.9	2170.1	2162.1	2151.3
32.5°	2146.0	2130.1	2087.3	2071.2	2060.5
35°	2063.2	2036.7	1993.9	1977.7	1964.4
37.5°	1969.8	1945.7	1903.0	1884.3	1871.0
40°	1873.8	1852.3	1809.5	1785.7	1774.9
42.5°	1780.4	1758.8	1716.4	1689.4	1673.7
45°	1679.0	1660.3	1620.1	1590.9	1580.2
47.5°	1580.2	1561.5	1518.7	1489.2	1473.4
50°	1476.0	1462.7	1425.2	1387.9	1374.6
52.5°	1374.6	1355.8	1321.3	1291.9	1273.2
55°	1270.6	1254.5	1222.5	1190.5	1177.1
57.5°	1166.4	1153.2	1118.3	1086.3	1075.5
60°	1062.2	1051.8	1014.3	984.9	977.0
62.5°	960.8	942.2	915.5	888.9	878.2
65°	856.9	840.8	814.1	790.1	776.8
67.5°	750.1	736.6	712.7	694.1	683.3
70°	651.3	640.5	616.5	597.8	587.3
72.5°	549.9	539.2	525.8	507.2	499.3
75°	448.3	443.2	429.6	413.8	419.1
77.5°	357.7	346.9	341.5	333.6	325.7
80°	267.1	264.2	258.9	250.9	245.5
82.5°	181.6	181.6	179.0	168.2	168.2
85°	109.3	106.7	104.2	96.0	93.5
87.5°	48.2	42.8	37.4	29.4	26.7
90°	1.1	13.0	21.8	27.3	29.3
92.5°	27.3	22.9	26.1	28.4	29.3
95°	70.7	34.8	42.4	48.0	46.8
97.5°	127.3	38.2	55.5	58.9	59.8
100°	192.8	43.6	62.1	70.7	72.9
102.5°	264.6	262.4	64.3	76.2	79.5
105°	331.0	363.7	66.4	78.4	82.8
107.5°	408.3	435.4	68.7	80.5	85.0
110°	482.4	505.2	190.6	81.7	86.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	552.1	571.6	553.1	83.8	87.1
115°	626.1	644.5	671.8	167.7	89.3
117.5°	690.3	712.0	730.7	574.8	289.6
120°	762.1	778.5	798.1	811.2	664.1
122.5°	823.0	840.5	862.4	868.9	870.0
125°	885.1	899.4	920.1	927.6	930.9
127.5°	941.7	957.0	973.5	984.3	985.3
130°	995.1	1012.6	1024.5	1036.5	1035.5
132.5°	1049.6	1063.8	1075.7	1085.6	1084.5
135°	1095.4	1112.9	1122.5	1133.5	1131.3
137.5°	1143.2	1156.3	1167.2	1178.1	1174.9
140°	1190.0	1198.8	1210.7	1220.5	1215.1
142.5°	1229.3	1237.0	1251.1	1259.7	1254.3
145°	1270.7	1269.5	1288.0	1295.7	1290.2
147.5°	1306.5	1303.2	1321.8	1327.2	1322.9
150°	1341.4	1333.8	1351.2	1357.7	1352.3
152.5°	1370.7	1362.1	1378.4	1385.0	1377.3
155°	1399.1	1389.4	1402.4	1408.9	1400.3
157.5°	1421.9	1413.3	1423.1	1430.7	1421.9
160°	1441.6	1435.0	1441.6	1448.0	1440.5
162.5°	1458.9	1452.5	1457.9	1465.5	1455.7
165°	1474.2	1467.8	1471.0	1478.5	1471.0
167.5°	1486.2	1479.6	1483.0	1490.6	1480.8
170°	1496.0	1489.4	1491.7	1499.2	1489.4
172.5°	1502.5	1496.0	1498.3	1505.8	1496.0
175°	1508.0	1500.3	1502.5	1510.1	1499.2
177.5°	1510.1	1502.5	1503.7	1511.3	1501.5
180°	1504.7	1504.7	1504.7	1504.7	1504.7



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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	14.45	15.42	15.30	16.29	17.39	14.00	14.98	14.85	15.85	16.95
	3H	16.09	16.97	16.96	17.85	18.98	15.60	16.48	16.47	17.36	18.49
	4H	16.67	17.50	17.55	18.39	19.52	16.18	17.01	17.06	17.90	19.03
	6H	17.07	17.83	17.96	18.72	19.87	16.57	17.33	17.46	18.22	19.37
	8H	17.17	17.89	18.07	18.81	19.95	16.66	17.39	17.56	18.31	19.45
	12H	17.21	17.90	18.12	18.81	19.98	16.70	17.40	17.61	18.30	19.47
4H	2H	14.91	15.74	15.79	16.63	17.76	14.55	15.38	15.44	16.27	17.40
	3H	16.76	17.45	17.66	18.37	19.52	16.35	17.05	17.25	17.97	19.11
	4H	17.47	18.10	18.37	19.01	20.19	17.04	17.67	17.95	18.59	19.76
	6H	17.97	18.51	18.89	19.45	20.63	17.54	18.08	18.46	19.02	20.20
	8H	18.11	18.62	19.04	19.56	20.74	17.67	18.18	18.60	19.12	20.31
	12H	18.18	18.64	19.12	19.59	20.79	17.73	18.19	18.68	19.14	20.34
8H	4H	17.66	18.17	18.58	19.10	20.29	17.28	17.79	18.21	18.73	19.91
	6H	18.27	18.69	19.22	19.67	20.86	17.89	18.31	18.84	19.28	20.47
	8H	18.48	18.85	19.44	19.82	21.03	18.09	18.46	19.05	19.43	20.63
	12H	18.60	18.93	19.57	19.89	21.15	18.19	18.52	19.16	19.48	20.74
12H	4H	17.65	18.11	18.59	19.06	20.25	17.28	17.74	18.22	18.69	19.88
	6H	18.30	18.67	19.26	19.64	20.84	17.92	18.30	18.88	19.26	20.47
	8H	18.53	18.86	19.49	19.82	21.07	18.15	18.48	19.11	19.44	20.69