

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: P918209

Luminaire Tested: DFN2DIP-TR4F0-040D100US930-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918209
REPORT IS A COMBINATION OF REPORTS P901998 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-040D100US930-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

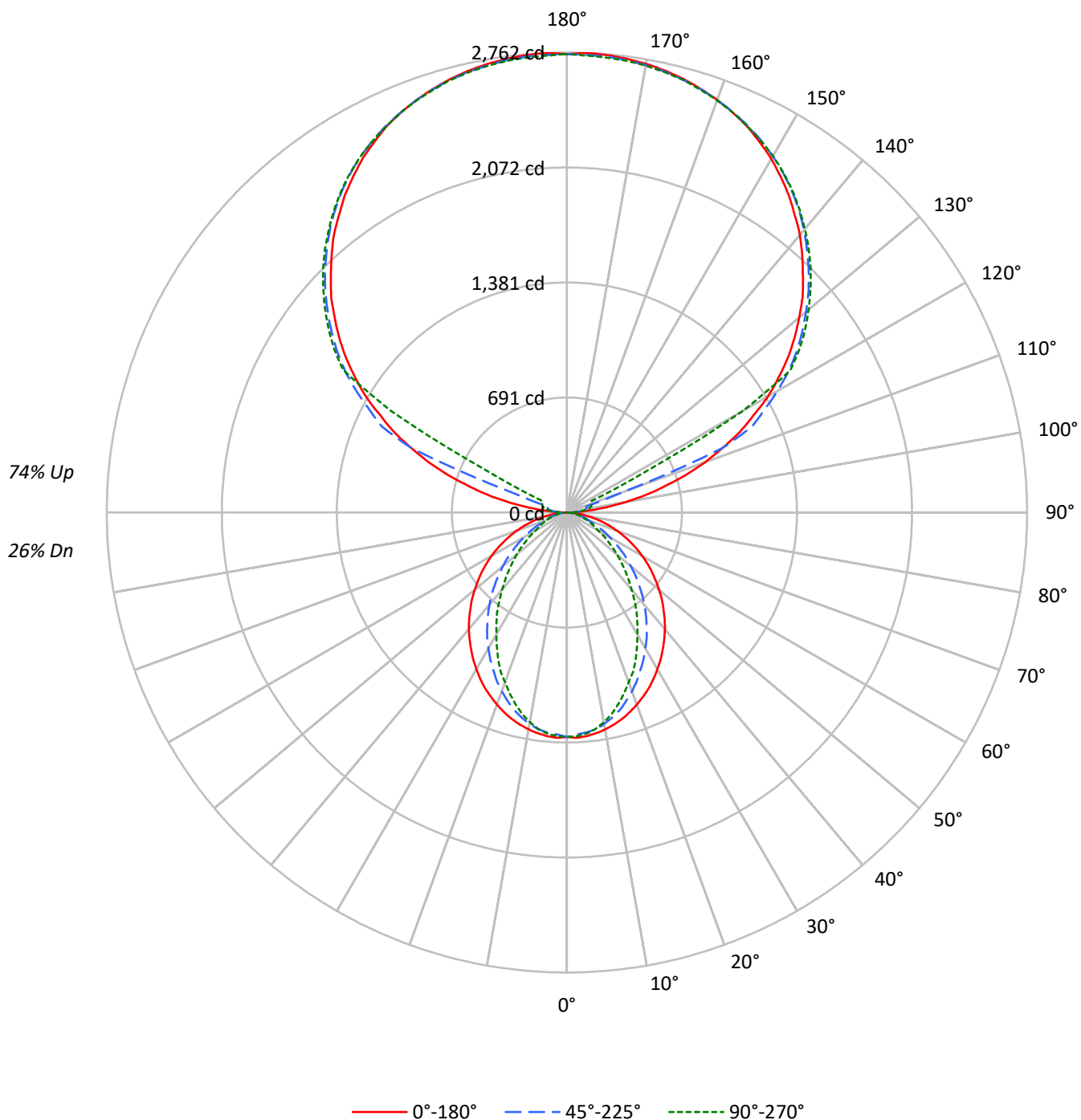
Lumens per Lamp: N/A
Luminaire Lumens: 10843.5 lumens
Efficiency: N/A
Efficacy: 100.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 108.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P918209

CATALOG NUMBER: DFN2DIP-TR4F0-040D100US930-RLLONL

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	101	101	101	101	90	90	90	90	70	70	70	51	51	51	34	34	34
1	93	88	85	82	82	79	76	73	61	59	58	45	44	43	30	29	29
2	84	77	72	67	75	69	65	60	54	51	48	40	38	36	27	26	25
3	77	68	61	56	69	61	55	51	48	44	41	35	33	31	24	23	21
4	71	60	53	47	63	54	48	43	43	38	35	32	29	26	22	20	19
5	65	54	46	41	58	48	42	37	38	33	30	28	25	23	19	18	16
6	60	48	41	35	53	43	37	32	34	30	26	26	23	20	18	16	14
7	55	43	36	31	49	39	33	28	31	26	23	23	20	18	16	14	13
8	51	39	32	27	45	36	29	25	28	24	20	21	18	16	15	13	12
9	47	36	29	24	42	32	26	22	26	21	18	20	16	14	14	12	10
10	44	33	26	21	39	30	24	20	24	19	16	18	15	13	13	11	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1071	1071	1071
5°	1073	1054	1061
10°	1062	1033	1026
15°	1047	999	973
20°	1028	952	907
25°	1008	899	844
30°	982	845	764
35°	956	787	693
40°	929	727	612
45°	898	660	539
50°	866	592	468
55°	833	520	399
60°	795	445	328
65°	751	368	296
70°	697	297	267
75°	629	262	243
80°	532	220	211
85°	371	147	159

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1459 cd/sqm

TEST NUMBER: P918209

CATALOG NUMBER: DFN2DIP-TR4F0-040D100US930-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.3	1.2
10°-20°	346.8	3.2
20°-30°	486.9	4.5
30°-40°	530.7	4.9
40°-50°	487.8	4.5
50°-60°	383.1	3.5
60°-70°	249.3	2.3
70°-80°	128.4	1.2
80°-90°	37.6	0.3
90°-100°	90.7	0.8
100°-110°	338.2	3.1
110°-120°	897.0	8.3
120°-130°	1487.8	13.7
130°-140°	1580.4	14.6
140°-150°	1468.8	13.5
150°-160°	1180.9	10.9
160°-170°	760.9	7.0
170°-180°	261.9	2.4
0°-30°	960.0	8.9
0°-40°	1490.7	13.7
0°-60°	2361.5	21.8
0°-90°	2776.9	25.6
90°-120°	1326.0	12.2
90°-150°	5862.9	54.1
90°-180°	8067.0	74.4
0°-180°	10843.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1348	1348	1348	1348	1348	
5°	1348	1342	1326	1337	1333	128
15°	1282	1268	1227	1204	1192	361
25°	1164	1125	1044	994	976	535
35°	1003	940	833	756	729	628
45°	820	738	610	523	494	633
55°	623	528	396	323	300	557
65°	421	322	212	171	167	417
75°	224	139	98	89	88	237
85°	52	27	23	23	23	60
90°	2	24	40	50	54	10
95°	129	64	78	88	86	153
105°	605	665	122	143	151	647
115°	1145	1179	1228	307	163	1127
125°	1619	1645	1682	1696	1702	1444
135°	2003	2035	2053	2073	2069	1547
145°	2324	2322	2355	2369	2359	1453
155°	2558	2541	2564	2576	2560	1179
165°	2696	2684	2690	2704	2690	762
175°	2757	2744	2748	2762	2742	262
180°	2752	2752	2752	2752	2752	

TEST NUMBER: P918209

CATALOG NUMBER: DFN2DIP-TR4F0-040D100US930-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1347.9	1347.9	1347.9	1347.9	1347.9
2.5°	1354.0	1347.9	1334.4	1346.7	1344.2
5°	1347.9	1341.7	1325.8	1336.8	1333.3
7.5°	1336.8	1329.6	1312.5	1317.3	1311.2
10°	1322.3	1313.7	1289.3	1285.6	1278.4
12.5°	1304.0	1293.0	1260.0	1252.7	1239.3
15°	1282.0	1268.5	1227.1	1204.0	1191.8
17.5°	1256.4	1236.8	1185.5	1158.8	1139.2
20°	1227.1	1202.6	1141.7	1111.3	1084.3
22.5°	1195.4	1167.3	1096.5	1055.1	1036.9
25°	1163.7	1124.6	1044.1	994.2	975.7
27.5°	1125.9	1084.3	995.3	938.0	909.9
30°	1085.7	1039.2	941.6	879.5	846.5
32.5°	1046.6	990.4	890.5	817.3	786.7
35°	1002.7	940.4	833.2	756.3	729.4
37.5°	960.0	892.8	779.4	695.2	664.8
40°	914.8	841.7	723.3	636.7	605.0
42.5°	868.5	790.4	667.2	576.9	546.5
45°	819.7	737.9	609.9	523.3	494.0
47.5°	773.4	686.8	555.1	468.4	441.6
50°	722.1	635.5	501.3	417.1	391.6
52.5°	672.1	580.6	450.1	369.6	346.4
55°	623.3	528.2	396.4	323.3	300.1
57.5°	573.3	475.7	348.9	280.5	261.1
60°	522.0	424.4	298.8	236.7	217.2
62.5°	472.1	374.5	256.1	197.6	187.9
65°	420.9	322.0	212.2	170.8	167.1
67.5°	372.1	273.2	170.8	150.0	146.3
70°	320.8	225.7	141.5	129.3	124.3
72.5°	272.1	181.7	118.3	108.6	106.2
75°	224.4	139.0	97.6	89.0	87.9
77.5°	176.9	98.7	76.9	72.0	69.5
80°	132.9	70.8	58.5	53.7	53.7
82.5°	92.7	47.6	40.3	37.7	37.7
85°	52.4	26.8	23.2	23.2	23.2
87.5°	19.6	9.7	9.7	8.6	8.6
90°	1.9	23.9	39.7	49.9	53.6
92.5°	49.9	41.8	47.8	51.8	53.6
95°	129.3	63.6	77.5	87.7	85.6
97.5°	232.8	69.7	101.4	107.5	109.5
100°	352.5	79.7	113.5	129.3	133.4
102.5°	483.7	480.0	117.5	139.3	145.4
105°	605.3	665.0	121.6	143.2	151.3
107.5°	746.7	796.3	125.6	147.3	155.3
110°	882.1	923.7	348.5	149.4	157.2

TEST NUMBER: P918209

CATALOG NUMBER: DFN2DIP-TR4F0-040D100US930-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1009.5	1045.2	1011.5	153.2	159.4
115°	1144.8	1178.6	1228.5	306.6	163.4
117.5°	1262.2	1302.0	1336.0	1051.2	529.6
120°	1393.8	1423.5	1459.5	1483.4	1214.5
122.5°	1505.1	1537.0	1576.9	1588.8	1590.9
125°	1618.6	1644.6	1682.4	1696.4	1702.3
127.5°	1722.2	1750.0	1780.0	1799.9	1801.8
130°	1819.7	1851.7	1873.5	1895.4	1893.5
132.5°	1919.3	1945.3	1967.1	1985.0	1983.1
135°	2003.0	2034.9	2052.7	2072.7	2068.7
137.5°	2090.5	2114.4	2134.5	2154.3	2148.4
140°	2176.0	2192.2	2213.9	2231.9	2221.9
142.5°	2247.9	2261.9	2287.6	2303.5	2293.6
145°	2323.6	2321.5	2355.3	2369.3	2359.3
147.5°	2389.1	2383.2	2417.0	2426.9	2419.2
150°	2452.9	2439.0	2470.9	2482.7	2472.8
152.5°	2506.6	2490.7	2520.6	2532.6	2518.6
155°	2558.4	2540.6	2564.5	2576.3	2560.5
157.5°	2600.2	2584.4	2602.4	2616.3	2600.2
160°	2636.2	2624.1	2636.2	2648.0	2634.1
162.5°	2667.8	2656.0	2665.9	2679.9	2661.9
165°	2695.7	2683.9	2689.8	2703.8	2689.8
167.5°	2717.7	2705.6	2711.8	2725.8	2707.8
170°	2735.7	2723.7	2727.7	2741.6	2723.7
172.5°	2747.5	2735.7	2739.7	2753.7	2735.7
175°	2757.4	2743.5	2747.5	2761.5	2741.6
177.5°	2761.5	2747.5	2749.7	2763.6	2745.6
180°	2751.6	2751.6	2751.6	2751.6	2751.6

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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	4.50	5.17	5.65	6.30	7.88	0.48	1.14	1.62	2.27	3.86
	3H	6.17	6.76	7.32	7.90	9.50	1.65	2.25	2.81	3.39	4.99
	4H	6.77	7.33	7.93	8.47	10.08	2.10	2.66	3.26	3.80	5.40
	6H	7.18	7.70	8.35	8.84	10.46	2.41	2.93	3.58	4.07	5.69
	8H	7.30	7.80	8.48	8.95	10.56	2.50	2.99	3.67	4.15	5.75
	12H	7.36	7.83	8.54	8.98	10.61	2.53	3.00	3.71	4.15	5.78
4H	2H	4.50	5.07	5.67	6.21	7.81	1.05	1.62	2.22	2.76	4.36
	3H	6.32	6.78	7.49	7.95	9.57	2.39	2.86	3.56	4.02	5.64
	4H	7.00	7.43	8.18	8.59	10.22	2.93	3.36	4.11	4.52	6.15
	6H	7.51	7.88	8.69	9.05	10.68	3.34	3.71	4.52	4.89	6.51
	8H	7.68	8.02	8.86	9.19	10.83	3.47	3.81	4.65	4.98	6.62
	12H	7.77	8.08	8.96	9.26	10.90	3.52	3.84	4.72	5.02	6.66
8H	4H	6.96	7.30	8.14	8.47	10.11	3.20	3.54	4.38	4.71	6.35
	6H	7.52	7.80	8.72	9.01	10.65	3.71	4.00	4.91	5.21	6.84
	8H	7.73	7.98	8.94	9.17	10.83	3.90	4.15	5.11	5.34	6.99
	12H	7.86	8.08	9.07	9.27	10.96	4.01	4.23	5.22	5.42	7.11
12H	4H	6.90	7.21	8.10	8.39	10.04	3.19	3.51	4.39	4.69	6.33
	6H	7.49	7.74	8.70	8.93	10.58	3.76	4.01	4.96	5.20	6.85
	8H	7.70	7.92	8.91	9.11	10.80	3.96	4.18	5.17	5.37	7.06

END OF REPORT