

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: P915617

Luminaire Tested: DFN2DIP-TR4F0-080D080US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P915617
REPORT IS A COMBINATION OF REPORTS P901970 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-080D080US927-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

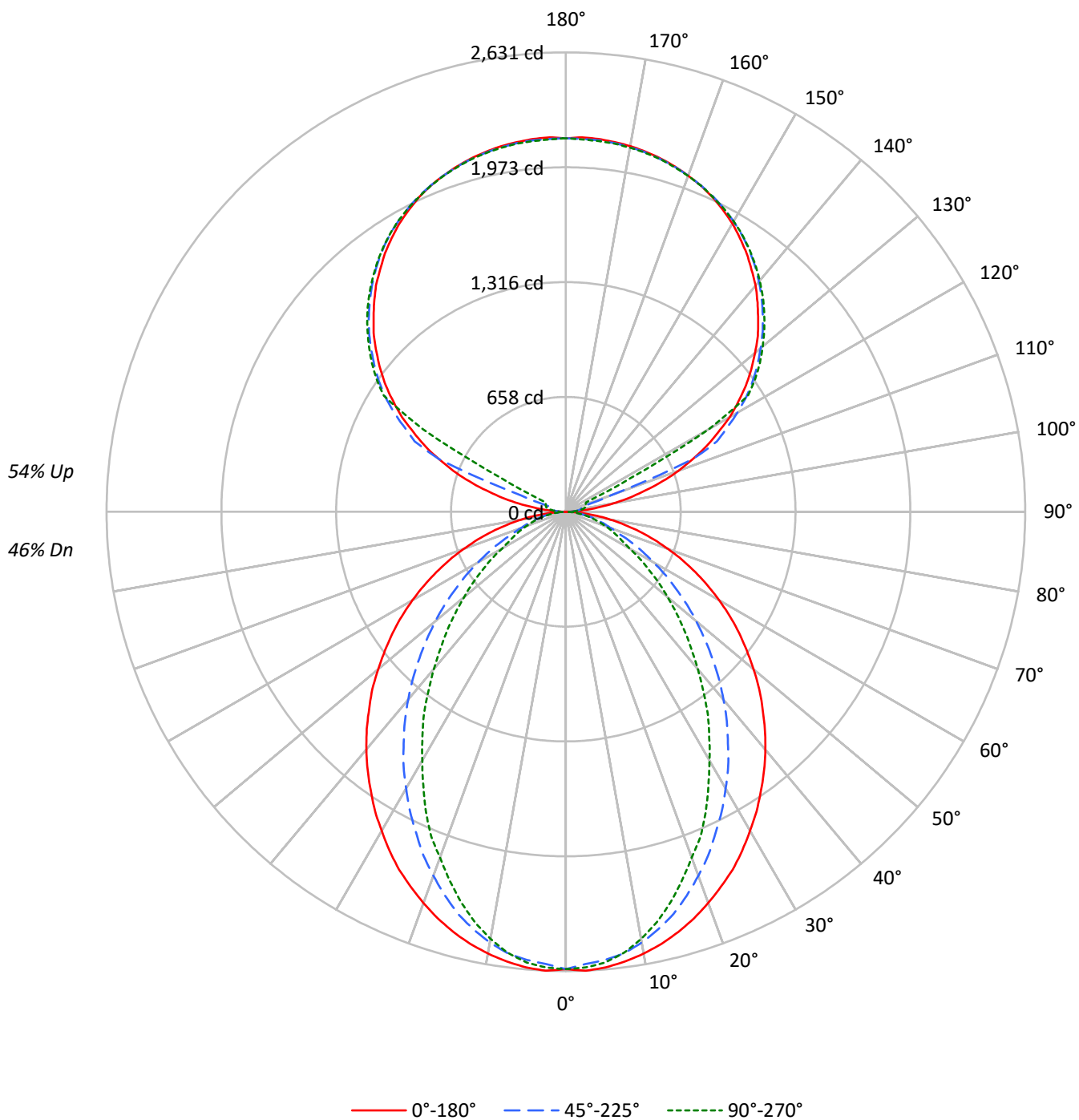
Lumens per Lamp: N/A
Luminaire Lumens: 11660.9 lumens
Efficiency: N/A
Efficacy: 86.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 134.2
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					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53	46		
1	97	93	90	86	89	86	83	80	72	70	68	59	58	56	47	46	45	40		
2	89	82	76	71	82	76	70	66	63	60	57	52	50	48	42	40	39	34		
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	34	29		
4	75	64	57	51	68	60	53	48	50	45	41	42	38	35	34	31	29	26		
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26	23		
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23	20		
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21	18		
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19	16		
9	51	39	32	27	47	36	30	25	31	26	22	27	23	20	22	19	17	15		
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	18	15	13		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2081	2081	2081
5°	2084	2048	2061
10°	2064	2008	1994
15°	2035	1941	1890
20°	1998	1850	1763
25°	1959	1747	1640
30°	1907	1642	1484
35°	1857	1529	1347
40°	1805	1412	1190
45°	1745	1282	1048
50°	1684	1151	909
55°	1619	1011	775
60°	1544	865	638
65°	1458	716	574
70°	1354	577	520
75°	1223	509	473
80°	1034	427	409
85°	721	285	308

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1745 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	245.5	2.1
10°-20°	673.9	5.8
20°-30°	946.1	8.1
30°-40°	1031.3	8.8
40°-50°	947.9	8.1
50°-60°	744.4	6.4
60°-70°	484.5	4.2
70°-80°	249.4	2.1
80°-90°	67.4	0.6
90°-100°	70.5	0.6
100°-110°	262.9	2.3
110°-120°	697.3	6.0
120°-130°	1156.5	9.9
130°-140°	1228.4	10.5
140°-150°	1141.7	9.8
150°-160°	917.9	7.9
160°-170°	591.5	5.1
170°-180°	203.6	1.7
0°-30°	1865.5	16.0
0°-40°	2896.8	24.8
0°-60°	4589.2	39.4
0°-90°	5390.6	46.2
90°-120°	1030.7	8.8
90°-150°	4557.3	39.1
90°-180°	6270.0	53.8
0°-180°	11660.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2619	2619	2619	2619	2619	
5°	2619	2608	2576	2598	2591	248
15°	2491	2465	2385	2340	2316	702
25°	2261	2186	2029	1932	1896	1040
35°	1948	1828	1619	1470	1417	1220
45°	1593	1434	1185	1017	960	1230
55°	1211	1026	770	628	583	1082
65°	818	626	412	332	325	811
75°	436	270	190	173	171	461
85°	102	52	45	45	45	117
90°	2	18	31	39	42	11
95°	100	49	60	68	66	119
105°	470	517	94	111	118	503
115°	890	916	955	238	127	876
125°	1258	1278	1308	1319	1323	1122
135°	1557	1582	1596	1611	1608	1203
145°	1806	1804	1831	1842	1834	1130
155°	1989	1975	1993	2003	1990	916
165°	2096	2086	2091	2102	2091	592
175°	2143	2133	2136	2146	2131	204
180°	2139	2139	2139	2139	2139	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2619.3	2619.3	2619.3	2619.3	2619.3
2.5°	2631.1	2619.3	2593.1	2617.0	2612.2
5°	2619.3	2607.5	2576.5	2597.9	2590.8
7.5°	2597.9	2583.8	2550.6	2559.9	2548.1
10°	2569.4	2552.9	2505.6	2498.3	2484.2
12.5°	2534.0	2512.6	2448.5	2434.4	2408.2
15°	2491.3	2465.1	2384.6	2339.6	2315.9
17.5°	2441.4	2403.5	2303.9	2251.9	2213.8
20°	2384.6	2337.1	2218.7	2159.6	2107.2
22.5°	2323.0	2268.4	2130.9	2050.4	2014.9
25°	2261.4	2185.5	2029.0	1932.0	1896.2
27.5°	2187.9	2107.2	1934.2	1822.8	1768.2
30°	2109.7	2019.4	1829.9	1709.1	1645.0
32.5°	2033.8	1924.7	1730.5	1588.2	1528.8
35°	1948.5	1827.6	1619.1	1469.7	1417.4
37.5°	1865.5	1735.0	1514.7	1351.0	1291.9
40°	1777.8	1635.7	1405.6	1237.3	1175.7
42.5°	1687.7	1536.1	1296.6	1121.2	1062.0
45°	1592.9	1434.0	1185.3	1016.8	960.0
47.5°	1502.9	1334.7	1078.6	910.1	858.1
50°	1403.3	1235.1	974.3	810.6	761.0
52.5°	1306.0	1128.1	874.6	718.3	673.3
55°	1211.2	1026.3	770.3	628.2	583.2
57.5°	1114.1	924.5	678.0	545.3	507.2
60°	1014.5	824.9	580.7	459.9	422.0
62.5°	917.4	727.8	497.7	384.0	365.2
65°	817.8	625.7	412.4	332.0	324.6
67.5°	723.0	530.9	332.0	291.4	284.5
70°	623.4	438.6	274.9	251.2	241.7
72.5°	528.6	353.1	229.9	211.0	206.2
75°	436.1	270.1	189.6	173.0	170.8
77.5°	343.8	191.9	149.4	139.8	135.1
80°	258.3	137.6	113.7	104.3	104.3
82.5°	180.1	92.5	78.2	73.4	73.4
85°	101.9	52.0	45.0	45.0	45.0
87.5°	37.9	18.9	18.9	16.6	16.6
90°	1.5	18.5	30.9	38.7	41.7
92.5°	38.7	32.6	37.2	40.2	41.7
95°	100.5	49.4	60.3	68.2	66.5
97.5°	181.0	54.2	78.8	83.7	85.1
100°	274.0	61.9	88.2	100.5	103.6
102.5°	376.0	373.0	91.3	108.2	113.0
105°	470.5	517.0	94.4	111.4	117.6
107.5°	580.4	618.9	97.6	114.5	120.7
110°	685.7	718.0	270.9	116.1	122.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	784.7	812.5	786.2	119.1	123.9
115°	889.9	916.2	954.9	238.4	127.0
117.5°	981.2	1012.1	1038.5	817.1	411.7
120°	1083.4	1106.5	1134.5	1153.0	944.0
122.5°	1169.9	1194.8	1225.8	1235.0	1236.7
125°	1258.1	1278.3	1307.7	1318.6	1323.2
127.5°	1338.6	1360.3	1383.7	1399.1	1400.6
130°	1414.5	1439.3	1456.3	1473.4	1471.9
132.5°	1491.9	1512.1	1529.1	1543.0	1541.5
135°	1557.0	1581.7	1595.5	1611.2	1608.0
137.5°	1625.0	1643.5	1659.1	1674.6	1670.0
140°	1691.5	1704.0	1720.9	1734.9	1727.1
142.5°	1747.4	1758.2	1778.2	1790.6	1782.8
145°	1806.2	1804.5	1830.8	1841.7	1833.9
147.5°	1857.1	1852.5	1878.7	1886.5	1880.4
150°	1906.7	1895.8	1920.6	1929.8	1922.1
152.5°	1948.4	1936.1	1959.2	1968.6	1957.8
155°	1988.7	1974.9	1993.4	2002.6	1990.4
157.5°	2021.2	2008.9	2022.8	2033.7	2021.2
160°	2049.1	2039.8	2049.1	2058.3	2047.5
162.5°	2073.8	2064.6	2072.3	2083.1	2069.2
165°	2095.5	2086.3	2090.9	2101.7	2090.9
167.5°	2112.5	2103.2	2107.9	2118.8	2104.8
170°	2126.5	2117.1	2120.3	2131.1	2117.1
172.5°	2135.7	2126.5	2129.6	2140.5	2126.5
175°	2143.4	2132.6	2135.7	2146.5	2131.1
177.5°	2146.5	2135.7	2137.3	2148.2	2134.2
180°	2138.8	2138.8	2138.8	2138.8	2138.8

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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	9.32	10.13	10.32	11.13	12.45	5.30	6.10	6.29	7.10	8.43
	3H	11.00	11.72	12.01	12.73	14.07	6.49	7.20	7.49	8.21	9.56
	4H	11.61	12.28	12.63	13.30	14.65	6.94	7.61	7.95	8.63	9.98
	6H	12.03	12.65	13.06	13.67	15.04	7.26	7.88	8.28	8.90	10.27
	8H	12.15	12.74	13.19	13.78	15.14	7.35	7.94	8.38	8.97	10.34
	12H	12.21	12.78	13.25	13.80	15.19	7.39	7.95	8.43	8.98	10.37
4H	2H	9.34	10.02	10.36	11.03	12.39	5.89	6.57	6.92	7.58	8.94
	3H	11.17	11.73	12.20	12.77	14.14	7.24	7.80	8.27	8.84	10.21
	4H	11.86	12.37	12.90	13.41	14.80	7.79	8.30	8.83	9.34	10.73
	6H	12.37	12.81	13.42	13.87	15.26	8.20	8.65	9.25	9.70	11.09
	8H	12.54	12.96	13.60	14.01	15.41	8.33	8.75	9.38	9.80	11.20
	12H	12.64	13.01	13.71	14.08	15.48	8.40	8.77	9.47	9.83	11.24
8H	4H	11.82	12.23	12.87	13.29	14.69	8.06	8.48	9.11	9.53	10.93
	6H	12.39	12.73	13.46	13.82	15.22	8.58	8.92	9.66	10.02	11.41
	8H	12.60	12.90	13.69	13.98	15.40	8.77	9.07	9.85	10.15	11.57
	12H	12.74	13.00	13.83	14.08	15.54	8.89	9.15	9.98	10.23	11.69
12H	4H	11.77	12.15	12.84	13.21	14.62	8.07	8.44	9.14	9.50	10.91
	6H	12.36	12.66	13.44	13.74	15.16	8.63	8.93	9.71	10.01	11.43
	8H	12.58	12.84	13.67	13.92	15.38	8.84	9.10	9.93	10.18	11.64