

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: P918109

Luminaire Tested: DFN2DIP-TR3F0-070D040US930-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P918109
REPORT IS A COMBINATION OF REPORTS P901813 AND P898751
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-070D040US930-FLLONL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

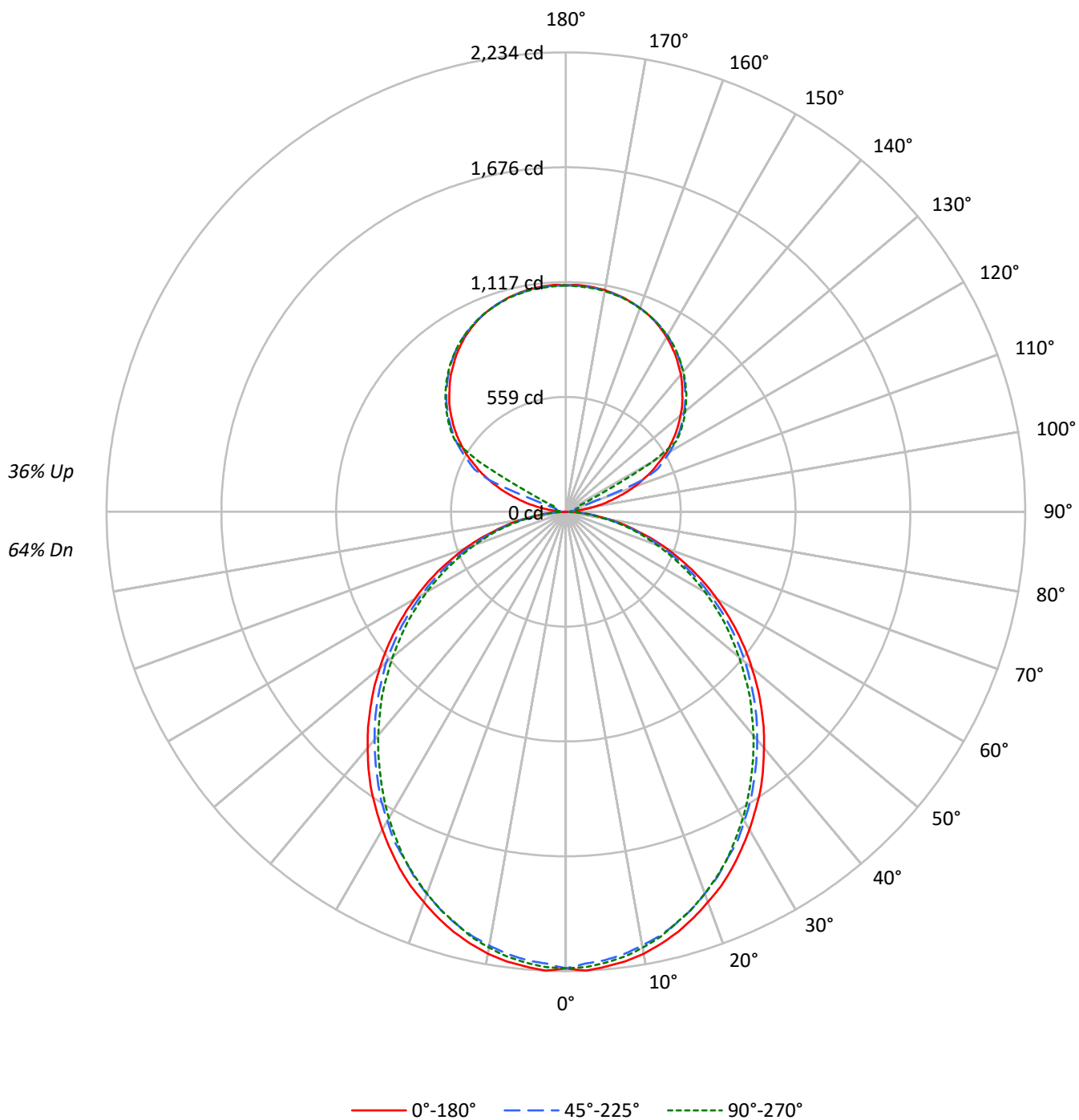
Lumens per Lamp: N/A
Luminaire Lumens: 8878.6 lumens
Efficiency: N/A
Efficacy: 89.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 99.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	110	110	110	110	104	104	104	104	91	91	91	79	79	79	69	69	69
1	101	96	92	89	94	91	87	84	80	77	75	70	68	66	61	59	58
2	92	84	78	73	86	79	74	69	70	66	62	61	58	55	53	51	49
3	84	74	67	61	78	70	63	58	62	57	52	54	50	47	47	44	42
4	77	66	58	51	72	62	55	49	55	49	45	48	44	40	42	39	36
5	71	59	50	44	66	55	48	42	49	43	39	44	39	35	38	34	31
6	65	53	44	38	61	50	42	37	44	38	34	39	34	31	35	31	28
7	60	48	39	34	56	45	38	32	40	34	30	36	31	27	32	28	25
8	56	43	35	30	52	41	34	29	37	31	27	33	28	24	29	25	22
9	52	40	32	27	49	38	31	26	34	28	24	30	25	22	27	23	20
10	49	36	29	24	46	35	28	23	31	26	22	28	23	20	25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2767	2767	2767
5°	2770	2726	2745
10°	2746	2687	2706
15°	2704	2641	2646
20°	2648	2577	2585
25°	2592	2501	2514
30°	2523	2430	2425
35°	2457	2347	2331
40°	2375	2263	2241
45°	2294	2179	2149
50°	2206	2090	2043
55°	2113	1988	1945
60°	2008	1866	1832
65°	1893	1740	1699
70°	1747	1587	1556
75°	1544	1402	1420
80°	1299	1167	1167
85°	919	769	754

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2294 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	209.0	2.4
10°-20°	588.1	6.6
20°-30°	864.2	9.7
30°-40°	1003.7	11.3
40°-50°	1002.5	11.3
50°-60°	874.2	9.8
60°-70°	646.2	7.3
70°-80°	365.6	4.1
80°-90°	98.4	1.1
90°-100°	36.3	0.4
100°-110°	135.3	1.5
110°-120°	358.8	4.0
120°-130°	595.1	6.7
130°-140°	632.1	7.1
140°-150°	587.5	6.6
150°-160°	472.3	5.3
160°-170°	304.4	3.4
170°-180°	104.8	1.2
0°-30°	1661.3	18.7
0°-40°	2665.1	30.0
0°-60°	4541.7	51.2
0°-90°	5652.0	63.7
90°-120°	530.4	6.0
90°-150°	2345.2	26.4
90°-180°	3227.0	36.3
0°-180°	8878.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2221	2221	2221	2221	2221	
5°	2221	2212	2189	2206	2202	211
15°	2114	2101	2073	2082	2071	595
25°	1913	1896	1860	1864	1860	880
35°	1651	1629	1595	1582	1572	1031
45°	1343	1328	1296	1273	1264	1037
55°	1016	1004	978	952	942	909
65°	686	673	651	632	621	678
75°	359	355	344	331	335	383
85°	88	85	83	77	75	98
90°	1	10	16	20	21	8
95°	52	25	31	35	34	61
105°	242	266	49	57	60	259
115°	458	471	491	123	65	451
125°	647	658	673	679	681	577
135°	801	814	821	829	828	619
145°	929	929	942	948	944	581
155°	1023	1016	1026	1030	1024	472
165°	1078	1074	1076	1082	1076	305
175°	1103	1097	1099	1105	1097	105
180°	1101	1101	1101	1101	1101	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2220.6	2220.6	2220.6	2220.6	2220.6
2.5°	2233.6	2222.9	2199.3	2220.6	2216.6
5°	2220.6	2212.3	2188.7	2205.7	2201.6
7.5°	2205.7	2193.0	2169.4	2186.7	2182.4
10°	2182.4	2167.4	2141.8	2158.8	2152.5
12.5°	2150.2	2137.5	2111.9	2122.5	2118.2
15°	2114.0	2101.3	2073.4	2082.0	2071.3
17.5°	2069.1	2056.4	2028.5	2039.2	2028.5
20°	2019.9	2007.3	1977.3	1983.7	1975.3
22.5°	1971.0	1951.7	1923.9	1923.9	1919.5
25°	1913.3	1896.2	1860.0	1864.1	1860.0
27.5°	1849.1	1834.2	1806.5	1800.2	1789.5
30°	1785.3	1768.0	1736.1	1729.7	1721.1
32.5°	1716.8	1704.1	1669.9	1657.0	1648.4
35°	1650.7	1629.4	1595.1	1582.2	1571.6
37.5°	1575.9	1556.6	1522.4	1507.5	1496.8
40°	1499.1	1481.9	1447.6	1428.6	1420.0
42.5°	1424.3	1407.1	1373.1	1351.6	1338.9
45°	1343.2	1328.3	1296.1	1272.8	1264.1
47.5°	1264.1	1249.2	1215.0	1191.4	1178.8
50°	1180.8	1170.1	1140.2	1110.4	1099.7
52.5°	1099.7	1084.8	1057.1	1033.6	1018.6
55°	1016.5	1003.6	978.0	952.4	941.8
57.5°	933.2	922.5	894.6	869.0	860.5
60°	849.8	841.4	811.5	788.0	781.6
62.5°	768.7	753.7	732.5	711.2	702.5
65°	685.6	672.6	651.3	632.1	621.4
67.5°	600.1	589.3	570.2	555.3	546.7
70°	521.1	512.5	493.2	478.3	469.9
72.5°	439.9	431.4	420.7	405.8	399.4
75°	358.6	354.6	343.6	331.0	335.3
77.5°	286.2	277.5	273.2	266.8	260.6
80°	213.6	211.4	207.1	200.7	196.4
82.5°	145.2	145.2	143.2	134.6	134.6
85°	87.5	85.4	83.4	76.8	74.8
87.5°	38.5	34.2	29.9	23.6	21.3
90°	0.7	9.5	15.9	20.0	21.4
92.5°	20.0	16.7	19.1	20.7	21.4
95°	51.7	25.4	31.0	35.1	34.2
97.5°	93.2	27.9	40.6	43.0	43.8
100°	141.0	31.9	45.4	51.7	53.3
102.5°	193.5	192.0	47.0	55.7	58.1
105°	242.1	266.0	48.6	57.3	60.5
107.5°	298.6	318.5	50.2	58.9	62.1
110°	352.9	369.5	139.4	59.8	62.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	403.8	418.1	404.6	61.3	63.8
115°	457.9	471.4	491.4	122.6	65.4
117.5°	504.9	520.8	534.4	420.4	211.8
120°	557.5	569.4	583.8	593.4	485.8
122.5°	602.0	614.8	630.8	635.5	636.3
125°	647.4	657.9	672.9	678.6	680.9
127.5°	688.8	700.0	712.0	720.0	720.7
130°	727.9	740.7	749.3	758.1	757.4
132.5°	767.7	778.1	786.8	794.0	793.3
135°	801.2	814.0	821.1	829.1	827.5
137.5°	836.2	845.7	853.8	861.7	859.3
140°	870.4	876.9	885.6	892.8	888.8
142.5°	899.2	904.7	915.1	921.4	917.5
145°	929.4	928.6	942.1	947.7	943.7
147.5°	955.6	953.2	966.8	970.8	967.7
150°	981.1	975.6	988.4	993.1	989.1
152.5°	1002.7	996.3	1008.2	1013.0	1007.5
155°	1023.4	1016.3	1025.8	1030.5	1024.2
157.5°	1040.1	1033.7	1041.0	1046.5	1040.1
160°	1054.4	1049.6	1054.4	1059.2	1053.6
162.5°	1067.1	1062.4	1066.4	1072.0	1064.8
165°	1078.3	1073.6	1075.9	1081.5	1075.9
167.5°	1087.1	1082.2	1084.8	1090.3	1083.1
170°	1094.3	1089.5	1091.0	1096.7	1089.5
172.5°	1099.0	1094.3	1095.9	1101.5	1094.3
175°	1102.9	1097.4	1099.0	1104.6	1096.7
177.5°	1104.6	1099.0	1099.8	1105.5	1098.3
180°	1100.7	1100.7	1100.7	1100.7	1100.7

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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	11.93	12.93	12.76	13.78	14.84	11.50	12.50	12.33	13.35	14.41
	3H	13.59	14.49	14.43	15.35	16.44	13.12	14.02	13.97	14.88	15.97
	4H	14.18	15.03	15.04	15.90	16.99	13.71	14.56	14.57	15.43	16.53
	6H	14.58	15.36	15.45	16.24	17.35	14.11	14.89	14.98	15.77	16.88
	8H	14.68	15.43	15.56	16.32	17.44	14.21	14.96	15.09	15.85	16.97
	12H	14.73	15.44	15.62	16.33	17.47	14.26	14.97	15.14	15.86	17.00
4H	2H	12.40	13.25	13.27	14.12	15.22	12.06	12.91	12.93	13.78	14.88
	3H	14.27	14.98	15.15	15.88	17.00	13.88	14.59	14.76	15.49	16.61
	4H	14.98	15.63	15.87	16.53	17.67	14.58	15.23	15.47	16.13	17.27
	6H	15.50	16.06	16.40	16.98	18.12	15.09	15.65	16.00	16.57	17.72
	8H	15.65	16.17	16.55	17.08	18.24	15.24	15.76	16.15	16.68	17.84
	12H	15.72	16.19	16.65	17.13	18.29	15.31	15.78	16.23	16.71	17.87
8H	4H	15.19	15.71	16.09	16.63	17.78	14.83	15.35	15.74	16.27	17.43
	6H	15.81	16.25	16.75	17.20	18.36	15.46	15.89	16.39	16.85	18.00
	8H	16.03	16.41	16.97	17.36	18.54	15.67	16.05	16.61	17.00	18.17
	12H	16.16	16.50	17.11	17.44	18.66	15.78	16.12	16.73	17.06	18.29
12H	4H	15.18	15.65	16.10	16.58	17.75	14.83	15.30	15.76	16.24	17.40
	6H	15.84	16.23	16.79	17.18	18.35	15.50	15.88	16.44	16.83	18.00
	8H	16.08	16.42	17.03	17.36	18.59	15.73	16.07	16.68	17.01	18.23