

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: P923724

Luminaire Tested: DFN2DIP-TR4F0-060D070US940-RLFL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P923724
REPORT IS A COMBINATION OF REPORTS P900428 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-060D070US940-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

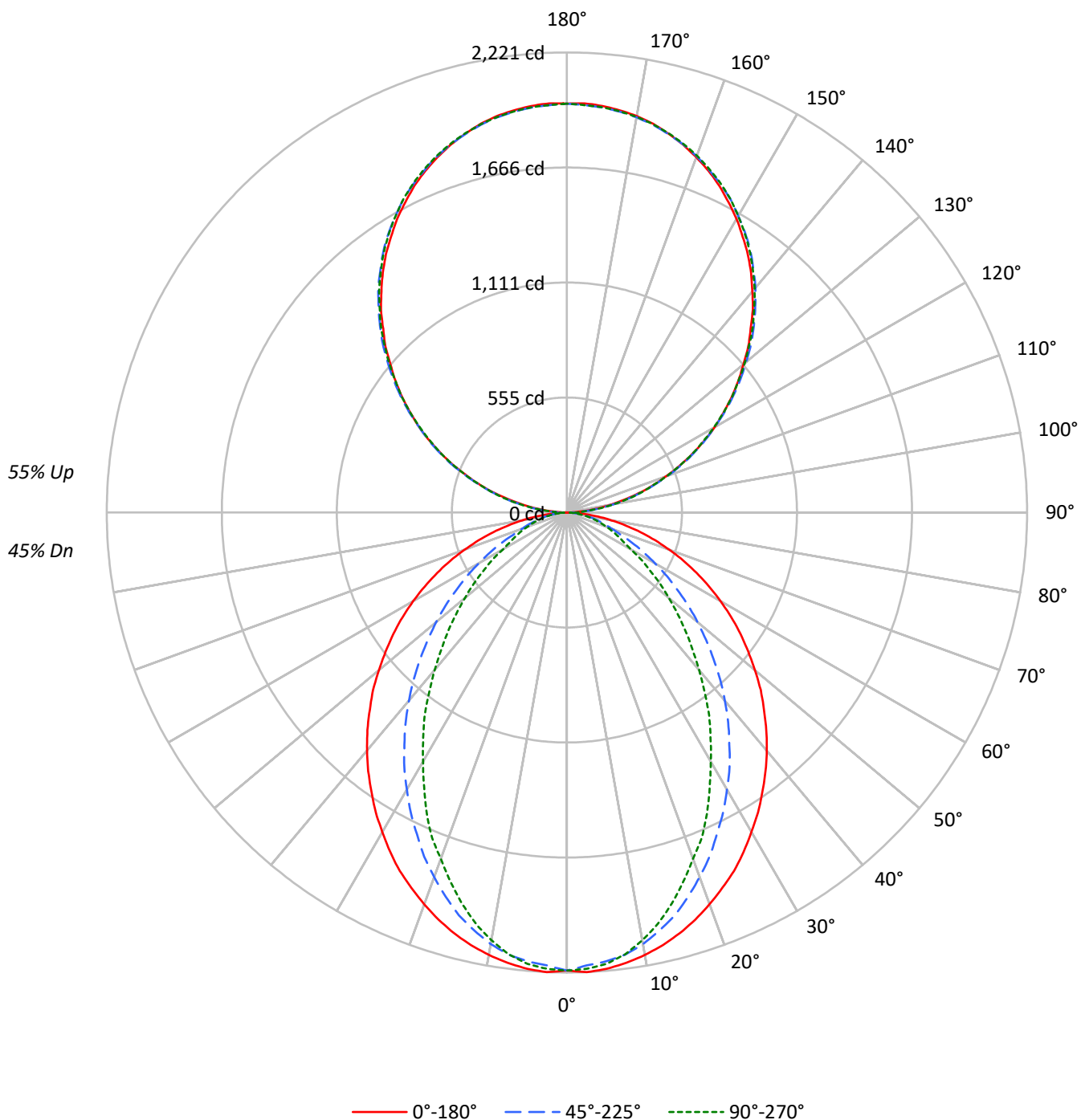
Lumens per Lamp: N/A
Luminaire Lumens: 10071.9 lumens
Efficiency: N/A
Efficacy: 95.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 105.5
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9781
Total Harmonic Distortion (THDi): 0.075
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	81	81	81	66	66	66	52	52	52
1	97	93	89	86	89	85	82	79	71	69	67	58	57	55	46	45	44
2	89	82	76	71	81	75	70	66	63	59	56	52	49	47	41	40	38
3	81	72	65	60	74	67	60	56	56	51	48	46	43	40	37	35	33
4	75	64	57	51	68	59	53	47	50	45	41	41	38	35	33	31	29
5	69	57	50	44	63	53	46	41	45	40	36	37	33	30	30	28	25
6	63	52	44	38	58	48	41	36	41	35	31	34	30	27	28	25	23
7	59	47	39	34	54	43	36	32	37	32	28	31	27	24	25	22	20
8	54	42	35	30	50	39	33	28	34	28	25	28	24	21	23	20	18
9	51	39	32	27	47	36	30	25	31	26	22	26	22	19	22	19	17
10	47	36	29	24	44	33	27	23	29	24	20	24	20	18	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1757	1757	1757
5°	1760	1729	1740
10°	1742	1695	1683
15°	1718	1639	1596
20°	1686	1562	1488
25°	1654	1475	1384
30°	1610	1386	1253
35°	1568	1291	1137
40°	1524	1192	1005
45°	1474	1083	885
50°	1421	972	767
55°	1367	854	655
60°	1304	730	539
65°	1231	605	485
70°	1143	487	439
75°	1033	430	399
80°	872	360	346
85°	608	240	260

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1538 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.2	2.1
10°-20°	568.9	5.6
20°-30°	798.7	7.9
30°-40°	870.7	8.6
40°-50°	800.3	7.9
50°-60°	628.5	6.2
60°-70°	409.1	4.1
70°-80°	210.6	2.1
80°-90°	59.4	0.6
90°-100°	122.2	1.2
100°-110°	388.1	3.9
110°-120°	664.2	6.6
120°-130°	873.6	8.7
130°-140°	980.5	9.7
140°-150°	961.5	9.5
150°-160°	806.6	8.0
160°-170°	534.9	5.3
170°-180°	187.0	1.9
0°-30°	1574.9	15.6
0°-40°	2445.6	24.3
0°-60°	3874.3	38.5
0°-90°	4553.3	45.2
90°-120°	1174.5	11.7
90°-150°	3990.1	39.6
90°-180°	5519.0	54.8
0°-180°	10071.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2211	2211	2211	2211	2211	
5°	2211	2201	2175	2193	2187	210
15°	2103	2081	2013	1975	1955	593
25°	1909	1845	1713	1631	1601	878
35°	1645	1543	1367	1241	1197	1030
45°	1345	1211	1001	858	810	1039
55°	1022	866	650	530	492	914
65°	690	528	348	280	274	685
75°	368	228	160	146	144	389
85°	86	44	38	38	38	99
90°	2	21	58	55	56	10
95°	87	104	107	107	104	97
105°	358	363	367	370	370	378
115°	667	676	673	671	667	659
125°	970	984	980	974	972	866
135°	1254	1272	1276	1274	1269	969
145°	1522	1534	1544	1546	1539	951
155°	1741	1746	1751	1759	1754	801
165°	1894	1892	1892	1904	1896	534
175°	1970	1966	1962	1974	1964	187
180°	1974	1974	1974	1974	1974	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2211.3	2211.3	2211.3	2211.3	2211.3
2.5°	2221.3	2211.3	2189.1	2209.3	2205.3
5°	2211.3	2201.3	2175.1	2193.3	2187.3
7.5°	2193.3	2181.3	2153.3	2161.1	2151.2
10°	2169.2	2155.2	2115.3	2109.2	2097.2
12.5°	2139.3	2121.2	2067.1	2055.2	2033.1
15°	2103.2	2081.1	2013.1	1975.1	1955.2
17.5°	2061.2	2029.1	1945.0	1901.0	1869.0
20°	2013.1	1973.0	1873.0	1823.1	1779.0
22.5°	1961.1	1915.0	1798.9	1731.0	1701.0
25°	1909.2	1845.0	1713.0	1631.0	1600.9
27.5°	1847.2	1779.0	1632.9	1538.8	1492.8
30°	1781.1	1704.9	1544.8	1442.9	1388.7
32.5°	1717.0	1624.9	1461.0	1340.8	1290.7
35°	1645.0	1542.9	1366.9	1240.7	1196.6
37.5°	1574.9	1464.7	1278.8	1140.6	1090.7
40°	1500.8	1380.9	1186.6	1044.5	992.6
42.5°	1424.9	1296.8	1094.7	946.5	896.6
45°	1344.8	1210.6	1000.7	858.4	810.4
47.5°	1268.8	1126.8	910.6	768.4	724.4
50°	1184.7	1042.7	822.5	684.3	642.5
52.5°	1102.5	952.4	738.4	606.4	568.4
55°	1022.5	866.5	650.3	530.4	492.3
57.5°	940.6	780.4	572.4	460.3	428.2
60°	856.5	696.4	490.3	388.3	356.2
62.5°	774.5	614.5	420.2	324.2	308.3
65°	690.5	528.2	348.2	280.3	274.1
67.5°	610.4	448.2	280.3	246.1	240.1
70°	526.3	370.2	232.0	212.1	204.0
72.5°	446.3	298.1	194.0	178.2	174.1
75°	368.2	228.0	160.1	146.1	144.2
77.5°	290.3	162.0	126.1	118.1	114.0
80°	218.0	116.1	95.9	88.1	88.1
82.5°	152.0	78.1	66.0	62.0	62.0
85°	86.0	44.0	38.0	38.0	38.0
87.5°	32.1	16.0	16.0	14.0	14.0
90°	1.8	21.4	58.3	54.8	56.5
92.5°	36.9	50.0	51.8	53.6	53.6
95°	86.9	103.5	106.6	106.6	103.5
97.5°	144.6	160.1	166.7	166.7	166.7
100°	211.2	225.0	229.7	229.7	227.9
102.5°	281.5	291.6	298.2	300.0	298.2
105°	358.3	363.0	366.6	369.6	369.6
107.5°	434.4	441.6	441.6	442.8	434.4
110°	508.3	517.8	517.8	517.8	513.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	588.0	598.2	596.4	591.6	588.0
115°	666.6	676.1	673.2	671.4	666.6
117.5°	744.5	757.6	749.3	744.5	739.8
120°	823.0	836.2	823.0	823.0	817.7
122.5°	894.5	911.1	902.9	898.0	894.5
125°	969.5	984.4	979.6	974.3	972.5
127.5°	1042.7	1061.1	1054.6	1047.5	1042.7
130°	1111.2	1132.6	1129.6	1126.1	1119.5
132.5°	1187.9	1204.6	1205.8	1197.5	1192.7
135°	1254.0	1272.4	1276.0	1274.2	1269.4
137.5°	1327.8	1342.6	1345.6	1344.4	1337.3
140°	1392.7	1407.6	1415.9	1415.9	1409.3
142.5°	1459.3	1474.2	1478.9	1480.7	1474.2
145°	1522.4	1534.3	1543.8	1545.6	1539.1
147.5°	1579.0	1593.8	1601.0	1603.9	1597.4
150°	1637.3	1647.3	1653.9	1659.3	1653.9
152.5°	1689.0	1699.2	1707.4	1714.0	1707.4
155°	1740.8	1745.5	1751.0	1759.3	1753.9
157.5°	1785.5	1789.0	1792.0	1803.9	1795.5
160°	1825.3	1828.9	1830.7	1840.8	1833.6
162.5°	1862.2	1862.2	1864.0	1875.3	1867.0
165°	1893.7	1891.9	1891.9	1903.9	1895.5
167.5°	1922.3	1917.0	1917.0	1928.9	1920.6
170°	1943.8	1939.0	1937.2	1949.1	1939.0
172.5°	1958.6	1953.8	1952.0	1964.0	1953.8
175°	1970.5	1965.8	1962.2	1974.1	1964.0
177.5°	1977.1	1972.3	1968.7	1978.9	1968.7
180°	1974.1	1974.1	1974.1	1974.1	1974.1

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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	8.63	9.43	9.64	10.43	11.78	4.61	5.40	5.61	6.41	7.75
	3H	10.31	11.02	11.32	12.03	13.40	5.79	6.50	6.81	7.52	8.88
	4H	10.91	11.58	11.94	12.61	13.98	6.24	6.91	7.27	7.93	9.30
	6H	11.33	11.95	12.37	12.98	14.36	6.56	7.18	7.60	8.21	9.59
	8H	11.46	12.05	12.50	13.09	14.46	6.65	7.24	7.69	8.28	9.66
	12H	11.52	12.08	12.57	13.11	14.51	6.70	7.25	7.74	8.29	9.69
4H	2H	8.65	9.32	9.68	10.34	11.71	5.20	5.87	6.23	6.89	8.26
	3H	10.47	11.03	11.51	12.08	13.46	6.54	7.10	7.59	8.15	9.53
	4H	11.16	11.67	12.21	12.71	14.12	7.09	7.60	8.14	8.64	10.05
	6H	11.68	12.11	12.73	13.18	14.58	7.51	7.95	8.57	9.01	10.41
	8H	11.85	12.26	12.91	13.32	14.73	7.64	8.05	8.70	9.11	10.52
	12H	11.94	12.31	13.02	13.38	14.80	7.70	8.07	8.78	9.14	10.56
8H	4H	11.13	11.54	12.19	12.59	14.01	7.37	7.78	8.43	8.84	10.25
	6H	11.69	12.03	12.77	13.13	14.54	7.89	8.22	8.97	9.32	10.74
	8H	11.91	12.20	13.00	13.29	14.72	8.08	8.38	9.17	9.46	10.89
	12H	12.05	12.31	13.14	13.38	14.86	8.20	8.46	9.29	9.54	11.01
12H	4H	11.08	11.45	12.15	12.52	13.94	7.37	7.74	8.45	8.81	10.23
	6H	11.67	11.96	12.76	13.05	14.48	7.94	8.23	9.02	9.32	10.75
	8H	11.89	12.15	12.98	13.23	14.70	8.15	8.41	9.24	9.48	10.96