

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: P904454

Luminaire Tested: DFN2DIP-TR3F0-060D070US830-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904454
REPORT IS A COMBINATION OF REPORTS P900333 AND P897195
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-060D070US830-FLLFLL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

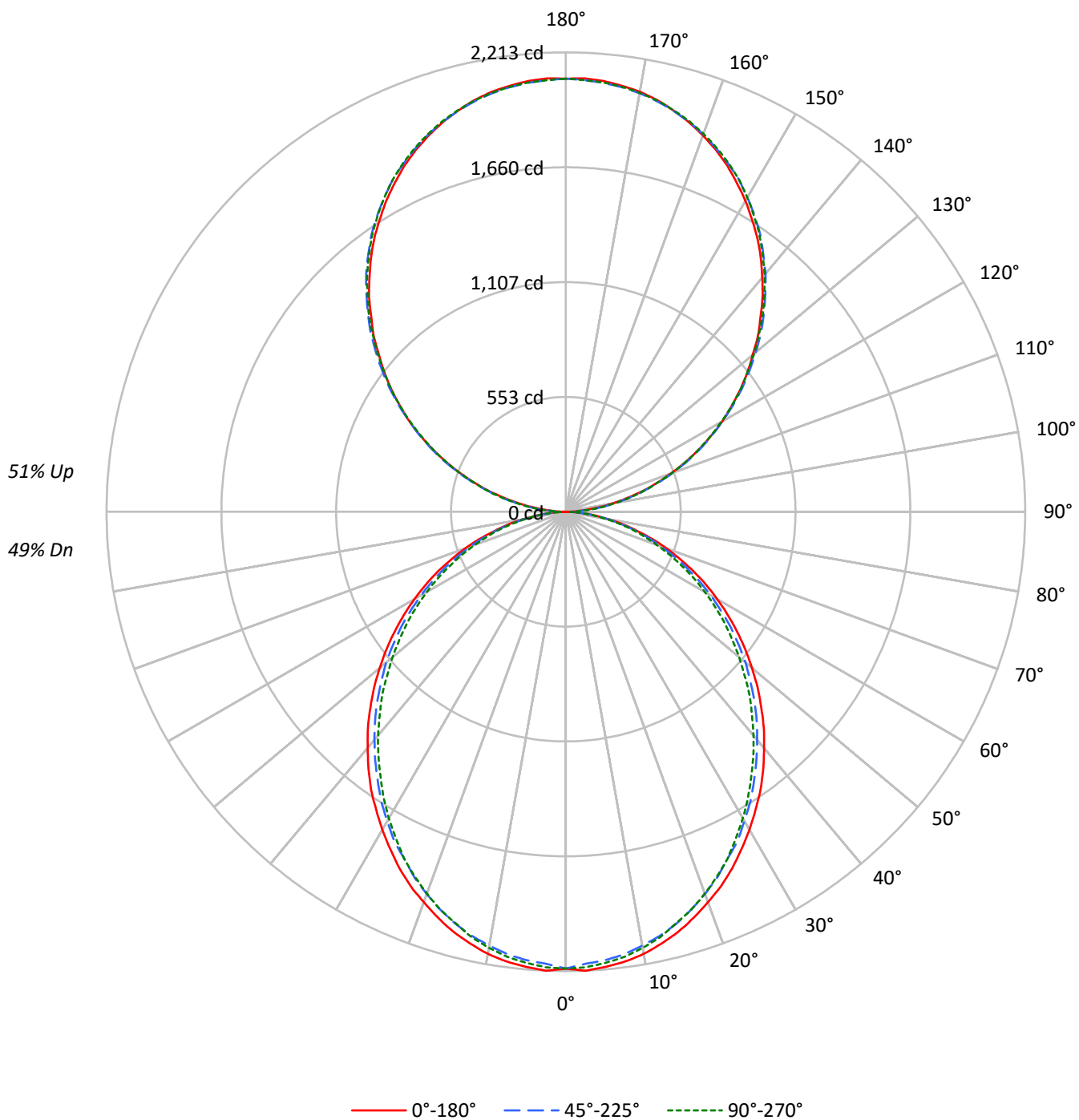
Lumens per Lamp: N/A
Luminaire Lumens: 11437.8 lumens
Efficiency: N/A
Efficacy: 103.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 110.6
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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	107	107	107	107	98	98	98	98	83	83	83	68	68	68	55	55	55
1	98	93	89	86	90	86	83	80	73	70	68	60	59	57	49	48	47
2	89	81	75	70	82	75	70	65	64	60	56	53	50	48	43	41	39
3	81	72	64	58	74	66	60	55	56	51	47	47	43	40	38	36	33
4	74	63	55	49	68	59	52	46	50	45	40	42	38	34	34	31	29
5	68	56	48	42	62	52	45	40	45	39	35	37	33	30	31	28	25
6	63	51	43	37	58	47	40	35	40	35	30	34	29	26	28	25	22
7	58	46	38	32	53	42	35	30	36	31	27	31	26	23	25	22	20
8	54	41	34	28	49	39	32	27	33	28	24	28	24	21	23	20	18
9	50	38	30	25	46	35	29	24	30	25	21	26	22	19	22	18	16
10	47	35	28	23	43	32	26	22	28	23	19	24	20	17	20	17	14

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2742	2742	2742
5°	2745	2701	2720
10°	2721	2663	2682
15°	2680	2617	2622
20°	2624	2553	2562
25°	2569	2478	2492
30°	2500	2408	2403
35°	2434	2326	2310
40°	2354	2243	2221
45°	2274	2159	2130
50°	2186	2071	2024
55°	2094	1970	1927
60°	1990	1850	1815
65°	1876	1725	1684
70°	1731	1572	1541
75°	1530	1389	1407
80°	1288	1156	1157
85°	909	761	747

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2274 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.1	1.8
10°-20°	582.7	5.1
20°-30°	856.4	7.5
30°-40°	994.6	8.7
40°-50°	993.4	8.7
50°-60°	866.2	7.6
60°-70°	640.3	5.6
70°-80°	362.3	3.2
80°-90°	101.5	0.9
90°-100°	129.1	1.1
100°-110°	410.3	3.6
110°-120°	702.1	6.1
120°-130°	923.3	8.1
130°-140°	1036.4	9.1
140°-150°	1016.3	8.9
150°-160°	852.6	7.5
160°-170°	565.4	4.9
170°-180°	197.6	1.7
0°-30°	1646.2	14.4
0°-40°	2640.9	23.1
0°-60°	4500.5	39.3
0°-90°	5604.6	49.0
90°-120°	1241.5	10.9
90°-150°	4217.6	36.9
90°-180°	5833.0	51.0
0°-180°	11437.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2200	2200	2200	2200	2200	
5°	2200	2192	2169	2186	2182	209
15°	2095	2082	2055	2063	2053	590
25°	1896	1879	1843	1847	1843	872
35°	1636	1615	1581	1568	1557	1021
45°	1331	1316	1284	1261	1253	1027
55°	1007	994	969	944	933	901
65°	679	667	646	626	616	672
75°	355	351	340	328	332	379
85°	87	85	83	76	74	97
90°	2	23	62	58	60	11
95°	92	109	113	113	109	102
105°	379	384	388	391	391	400
115°	705	715	712	710	705	697
125°	1025	1040	1036	1030	1028	916
135°	1326	1345	1349	1347	1342	1025
145°	1609	1622	1632	1634	1627	1005
155°	1840	1845	1851	1860	1854	847
165°	2002	2000	2000	2012	2004	565
175°	2083	2078	2074	2087	2076	198
180°	2087	2087	2087	2087	2087	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2200.5	2200.5	2200.5	2200.5	2200.5
2.5°	2213.3	2202.7	2179.3	2200.5	2196.4
5°	2200.5	2192.2	2168.8	2185.7	2181.6
7.5°	2185.7	2173.1	2149.8	2166.8	2162.6
10°	2162.6	2147.8	2122.3	2139.2	2132.9
12.5°	2130.7	2118.1	2092.7	2103.3	2099.0
15°	2094.7	2082.2	2054.6	2063.1	2052.6
17.5°	2050.3	2037.8	2010.2	2020.6	2010.2
20°	2001.6	1989.0	1959.4	1965.7	1957.4
22.5°	1953.1	1934.0	1906.4	1906.4	1902.1
25°	1895.8	1879.1	1843.0	1847.1	1843.0
27.5°	1832.3	1817.5	1790.1	1783.9	1773.3
30°	1769.1	1751.9	1720.3	1714.0	1705.4
32.5°	1701.2	1688.7	1654.7	1641.9	1633.4
35°	1635.7	1614.6	1580.6	1567.8	1557.3
37.5°	1561.6	1542.5	1508.6	1493.7	1483.2
40°	1485.4	1468.4	1434.5	1415.7	1407.1
42.5°	1411.4	1394.3	1360.7	1339.4	1326.7
45°	1331.1	1316.2	1284.3	1261.2	1252.6
47.5°	1252.6	1237.8	1204.0	1180.6	1168.0
50°	1170.1	1159.5	1129.9	1100.2	1089.7
52.5°	1089.7	1074.9	1047.4	1024.2	1009.4
55°	1007.3	994.5	969.1	943.8	933.2
57.5°	924.7	914.2	886.6	861.2	852.6
60°	842.1	833.8	804.2	780.8	774.5
62.5°	761.7	746.9	725.8	704.6	696.2
65°	679.3	666.6	645.5	626.3	615.8
67.5°	594.6	583.9	565.1	550.3	541.7
70°	516.3	507.8	488.7	473.9	465.6
72.5°	435.9	427.4	416.9	402.1	395.8
75°	355.3	351.4	340.5	328.0	332.2
77.5°	283.5	275.0	270.7	264.5	258.2
80°	211.7	209.4	205.2	198.9	194.6
82.5°	143.9	143.9	141.9	133.4	133.4
85°	86.6	84.6	82.6	76.1	74.1
87.5°	38.2	33.9	29.6	23.4	21.1
90°	1.9	22.6	61.6	57.9	59.8
92.5°	39.0	52.9	54.8	56.6	56.6
95°	91.8	109.4	112.6	112.6	109.4
97.5°	152.9	169.2	176.2	176.2	176.2
100°	223.3	237.8	242.8	242.8	240.9
102.5°	297.6	308.2	315.2	317.1	315.2
105°	378.7	383.7	387.5	390.7	390.7
107.5°	459.2	466.7	466.7	468.1	459.2
110°	537.2	547.3	547.3	547.3	542.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	621.5	632.3	630.4	625.3	621.5
115°	704.6	714.6	711.5	709.6	704.6
117.5°	786.9	800.8	792.0	786.9	781.9
120°	870.0	883.8	870.0	870.0	864.3
122.5°	945.5	963.1	954.3	949.2	945.5
125°	1024.7	1040.5	1035.5	1029.8	1027.9
127.5°	1102.1	1121.6	1114.7	1107.2	1102.1
130°	1174.5	1197.1	1194.0	1190.2	1183.3
132.5°	1255.7	1273.3	1274.5	1265.7	1260.7
135°	1325.5	1344.9	1348.8	1346.8	1341.8
137.5°	1403.4	1419.2	1422.3	1421.1	1413.5
140°	1472.1	1487.8	1496.6	1496.6	1489.7
142.5°	1542.5	1558.2	1563.2	1565.1	1558.2
145°	1609.2	1621.7	1631.8	1633.7	1626.8
147.5°	1669.0	1684.7	1692.2	1695.4	1688.5
150°	1730.6	1741.3	1748.2	1753.9	1748.2
152.5°	1785.3	1796.0	1804.8	1811.8	1804.8
155°	1840.0	1845.0	1850.8	1859.5	1853.9
157.5°	1887.3	1891.0	1894.1	1906.8	1897.9
160°	1929.4	1933.2	1935.0	1945.7	1938.1
162.5°	1968.4	1968.4	1970.3	1982.2	1973.4
165°	2001.7	1999.8	1999.8	2012.4	2003.6
167.5°	2031.9	2026.3	2026.3	2038.8	2030.0
170°	2054.6	2049.6	2047.7	2060.2	2049.6
172.5°	2070.3	2065.2	2063.3	2075.9	2065.2
175°	2082.8	2077.8	2074.1	2086.6	2075.9
177.5°	2089.8	2084.7	2080.9	2091.7	2080.9
180°	2086.6	2086.6	2086.6	2086.6	2086.6

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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	10.63	11.48	11.60	12.46	13.75	10.20	11.05	11.17	12.03	13.32
	3H	12.28	13.04	13.26	14.03	15.34	11.81	12.58	12.79	13.57	14.87
	4H	12.86	13.59	13.85	14.58	15.89	12.39	13.12	13.38	14.11	15.43
	6H	13.25	13.92	14.25	14.92	16.25	12.78	13.45	13.79	14.45	15.78
	8H	13.35	13.99	14.36	15.00	16.33	12.89	13.52	13.89	14.54	15.86
	12H	13.40	14.00	14.41	15.01	16.36	12.93	13.53	13.94	14.54	15.89
4H	2H	11.09	11.81	12.08	12.80	14.12	10.74	11.47	11.74	12.46	13.78
	3H	12.94	13.55	13.95	14.57	15.90	12.55	13.16	13.56	14.18	15.51
	4H	13.65	14.20	14.66	15.22	16.57	13.25	13.80	14.26	14.81	16.17
	6H	14.15	14.63	15.18	15.67	17.02	13.75	14.23	14.77	15.26	16.61
	8H	14.30	14.74	15.32	15.77	17.14	13.89	14.34	14.92	15.37	16.73
	12H	14.37	14.77	15.41	15.81	17.18	13.95	14.35	15.00	15.40	16.77
8H	4H	13.84	14.28	14.87	15.32	16.68	13.48	13.93	14.51	14.96	16.32
	6H	14.46	14.83	15.51	15.90	17.26	14.10	14.47	15.15	15.54	16.90
	8H	14.67	15.00	15.73	16.06	17.44	14.31	14.63	15.37	15.69	17.07
	12H	14.80	15.08	15.86	16.14	17.56	14.42	14.71	15.48	15.76	17.18
12H	4H	13.82	14.23	14.87	15.27	16.64	13.48	13.88	14.52	14.92	16.29
	6H	14.49	14.81	15.55	15.87	17.25	14.14	14.46	15.20	15.52	16.90
	8H	14.72	15.01	15.78	16.06	17.48	14.37	14.65	15.43	15.71	17.13

END OF REPORT