

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: P920902

Luminaire Tested: DFN2DIP-TR3F0-090D070US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920902
REPORT IS A COMBINATION OF REPORTS P900340 AND P897195
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-090D070US935-RLLFLL
Description: 3 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

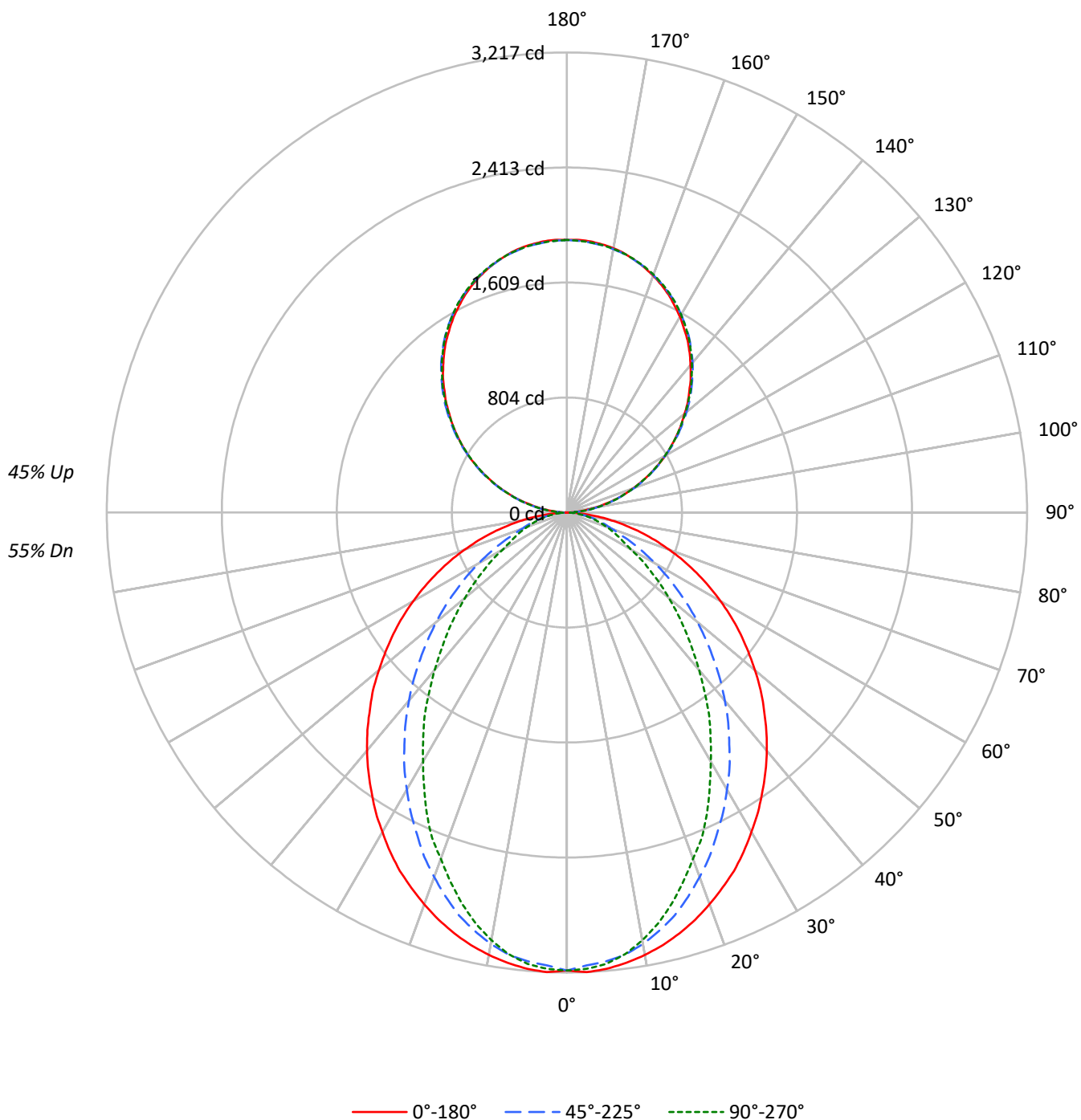
Lumens per Lamp: N/A
Luminaire Lumens: 11920.6 lumens
Efficiency: N/A
Efficacy: 80.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 148.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P920902

CATALOG NUMBER: DFN2DIP-TR3F0-090D070US935-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P920902

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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	108	108	108	108		101	101	101	101		86	86	86		73	73	73		61	61	61
1	99	95	92	88		92	89	86	83		76	74	72		65	63	62		55	54	53
2	91	84	78	73		84	78	73	69		68	64	60		58	55	53		49	47	45
3	83	74	67	61		77	69	63	58		60	55	51		52	48	45		44	41	39
4	77	66	58	52		71	62	55	50		54	49	44		46	42	39		39	36	34
5	71	59	51	45		65	55	48	43		48	43	39		42	38	34		36	33	30
6	65	53	45	40		60	50	43	38		44	38	34		38	34	30		33	29	27
7	60	48	41	35		56	45	38	33		40	34	30		35	30	27		30	27	24
8	56	44	36	31		52	41	35	30		37	31	27		32	28	24		28	24	22
9	52	40	33	28		49	38	31	27		34	28	24		30	25	22		26	22	20
10	49	37	30	25		46	35	29	24		31	26	22		27	23	20		24	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3991	3991	3991
5°	3995	3924	3950
10°	3953	3844	3819
15°	3897	3714	3618
20°	3823	3535	3372
25°	3746	3336	3134
30°	3645	3132	2834
35°	3546	2913	2571
40°	3445	2687	2269
45°	3327	2436	1995
50°	3205	2184	1729
55°	3078	1914	1472
60°	2931	1633	1209
65°	2761	1348	1085
70°	2555	1081	978
75°	2296	946	885
80°	1921	783	758
85°	1307	507	555

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3327 cd/sqm

TEST NUMBER: P920902

CATALOG NUMBER: DFN2DIP-TR3F0-090D070US935-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	300.2	2.5
10°-20°	824.0	6.9
20°-30°	1156.9	9.7
30°-40°	1261.0	10.6
40°-50°	1159.0	9.7
50°-60°	910.3	7.6
60°-70°	592.5	5.0
70°-80°	305.0	2.6
80°-90°	83.3	0.7
90°-100°	117.9	1.0
100°-110°	374.8	3.1
110°-120°	641.3	5.4
120°-130°	843.5	7.1
130°-140°	946.7	7.9
140°-150°	928.4	7.8
150°-160°	778.8	6.5
160°-170°	516.5	4.3
170°-180°	180.5	1.5
0°-30°	2281.0	19.1
0°-40°	3542.0	29.7
0°-60°	5611.3	47.1
0°-90°	6592.1	55.3
90°-120°	1134.1	9.5
90°-150°	3852.7	32.3
90°-180°	5328.0	44.7
0°-180°	11920.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3203	3203	3203	3203	3203	
5°	3203	3188	3150	3176	3168	304
15°	3046	3014	2916	2861	2832	858
25°	2765	2672	2481	2362	2319	1272
35°	2383	2235	1980	1797	1733	1491
45°	1948	1753	1449	1243	1174	1504
55°	1481	1255	942	768	713	1323
65°	1000	765	504	406	397	991
75°	533	330	232	212	209	564
85°	124	64	55	55	55	143
90°	2	21	56	53	55	12
95°	84	100	103	103	100	93
105°	346	350	354	357	357	365
115°	644	653	650	648	644	637
125°	936	950	946	941	939	837
135°	1211	1229	1232	1230	1226	936
145°	1470	1481	1491	1492	1486	918
155°	1681	1685	1691	1699	1694	774
165°	1828	1827	1827	1838	1830	516
175°	1903	1898	1895	1906	1896	181
180°	1906	1906	1906	1906	1906	

TEST NUMBER: P920902

CATALOG NUMBER: DFN2DIP-TR3F0-090D070US935-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3202.7	3202.7	3202.7	3202.7	3202.7
2.5°	3217.1	3202.7	3170.6	3199.9	3194.0
5°	3202.7	3188.2	3150.4	3176.5	3167.9
7.5°	3176.5	3159.3	3118.7	3130.1	3115.6
10°	3141.8	3121.5	3063.7	3054.7	3037.5
12.5°	3098.4	3072.3	2993.9	2976.6	2944.6
15°	3046.1	3014.2	2915.8	2860.7	2831.8
17.5°	2985.3	2938.8	2817.0	2753.4	2707.0
20°	2915.8	2857.7	2712.7	2640.5	2576.5
22.5°	2840.4	2773.7	2605.5	2507.1	2463.7
25°	2765.1	2672.2	2481.0	2362.2	2318.6
27.5°	2675.3	2576.5	2365.0	2228.8	2162.1
30°	2579.6	2469.3	2237.4	2089.8	2011.4
32.5°	2486.7	2353.3	2115.9	1941.9	1869.3
35°	2382.6	2234.6	1979.7	1797.1	1733.1
37.5°	2281.0	2121.5	1852.1	1651.9	1579.7
40°	2173.8	2000.0	1718.6	1512.9	1437.6
42.5°	2063.6	1878.3	1585.4	1370.9	1298.6
45°	1947.7	1753.4	1449.2	1243.2	1173.7
47.5°	1837.6	1631.9	1318.9	1112.8	1049.2
50°	1715.9	1510.1	1191.3	991.1	930.5
52.5°	1596.9	1379.5	1069.5	878.2	823.2
55°	1480.9	1254.9	941.8	768.2	713.1
57.5°	1362.3	1130.4	829.1	666.7	620.3
60°	1240.4	1008.6	710.1	562.4	516.0
62.5°	1121.8	889.9	608.6	469.6	446.5
65°	1000.0	765.1	504.3	405.9	397.0
67.5°	884.1	649.1	405.9	356.4	347.8
70°	762.3	536.3	336.1	307.2	295.5
72.5°	646.4	431.7	281.0	258.0	252.2
75°	533.2	330.3	231.9	211.5	208.8
77.5°	420.3	234.6	182.6	171.0	165.1
80°	315.8	168.2	139.0	127.6	127.6
82.5°	220.2	113.1	95.7	89.8	89.8
85°	124.5	63.6	55.0	55.0	55.0
87.5°	46.4	23.1	23.1	20.3	20.3
90°	1.7	20.7	56.3	52.9	54.6
92.5°	35.6	48.3	50.0	51.7	51.7
95°	83.9	100.0	102.9	102.9	100.0
97.5°	139.7	154.5	160.9	160.9	160.9
100°	204.0	217.2	221.8	221.8	220.1
102.5°	271.8	281.5	287.9	289.6	287.9
105°	345.9	350.5	354.0	356.9	356.9
107.5°	419.5	426.4	426.4	427.6	419.5
110°	490.8	500.0	500.0	500.0	495.3

TEST NUMBER: P920902

CATALOG NUMBER: DFN2DIP-TR3F0-090D070US935-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	567.7	577.6	575.8	571.2	567.7
115°	643.6	652.8	650.0	648.2	643.6
117.5°	718.8	731.5	723.5	718.8	714.3
120°	794.7	807.4	794.7	794.7	789.5
122.5°	863.7	879.8	871.8	867.1	863.7
125°	936.1	950.5	945.9	940.7	939.0
127.5°	1006.8	1024.6	1018.3	1011.4	1006.8
130°	1072.9	1093.6	1090.7	1087.3	1080.9
132.5°	1147.0	1163.1	1164.2	1156.2	1151.6
135°	1210.8	1228.6	1232.1	1230.3	1225.7
137.5°	1282.0	1296.4	1299.2	1298.1	1291.2
140°	1344.7	1359.1	1367.1	1367.1	1360.8
142.5°	1409.0	1423.4	1428.0	1429.7	1423.4
145°	1470.0	1481.4	1490.6	1492.4	1486.1
147.5°	1524.6	1538.9	1545.8	1548.7	1542.4
150°	1580.9	1590.6	1597.0	1602.1	1597.0
152.5°	1630.8	1640.6	1648.6	1655.0	1648.6
155°	1680.8	1685.4	1690.7	1698.7	1693.5
157.5°	1724.0	1727.4	1730.3	1741.8	1733.7
160°	1762.5	1765.9	1767.6	1777.4	1770.5
162.5°	1798.1	1798.1	1799.8	1810.7	1802.7
165°	1828.5	1826.8	1826.8	1838.3	1830.2
167.5°	1856.1	1851.0	1851.0	1862.4	1854.4
170°	1876.8	1872.2	1870.5	1882.0	1872.2
172.5°	1891.2	1886.5	1884.8	1896.3	1886.5
175°	1902.6	1898.1	1894.6	1906.1	1896.3
177.5°	1909.0	1904.4	1900.9	1910.7	1900.9
180°	1906.1	1906.1	1906.1	1906.1	1906.1

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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	12.38	13.26	13.30	14.19	15.39	8.36	9.24	9.28	10.17	11.36
	3H	14.06	14.84	14.99	15.78	17.00	9.55	10.33	10.48	11.27	12.49
	4H	14.66	15.40	15.60	16.34	17.57	10.00	10.74	10.94	11.68	12.91
	6H	15.08	15.76	16.03	16.71	17.95	10.31	11.00	11.27	11.95	13.19
	8H	15.20	15.85	16.16	16.82	18.06	10.40	11.05	11.37	12.02	13.26
	12H	15.26	15.87	16.23	16.84	18.10	10.45	11.06	11.41	12.02	13.29
4H	2H	12.41	13.15	13.36	14.09	15.32	8.96	9.70	9.91	10.64	11.87
	3H	14.23	14.84	15.19	15.82	17.06	10.30	10.92	11.26	11.89	13.14
	4H	14.92	15.48	15.88	16.45	17.71	10.85	11.41	11.82	12.38	13.65
	6H	15.42	15.91	16.41	16.90	18.17	11.26	11.75	12.25	12.74	14.01
	8H	15.60	16.05	16.58	17.03	18.31	11.39	11.84	12.37	12.83	14.11
	12H	15.69	16.09	16.69	17.10	18.38	11.46	11.86	12.46	12.86	14.15
8H	4H	14.89	15.34	15.87	16.32	17.60	11.13	11.58	12.11	12.56	13.85
	6H	15.44	15.81	16.45	16.84	18.12	11.64	12.01	12.65	13.04	14.32
	8H	15.65	15.98	16.67	17.00	18.30	11.83	12.15	12.84	13.17	14.47
	12H	15.79	16.08	16.81	17.09	18.43	11.94	12.23	12.96	13.24	14.58
12H	4H	14.84	15.24	15.84	16.25	17.53	11.13	11.54	12.13	12.54	13.83
	6H	15.42	15.75	16.43	16.76	18.06	11.69	12.01	12.70	13.03	14.33
	8H	15.63	15.92	16.65	16.93	18.28	11.89	12.18	12.91	13.19	14.54