

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: P920836

Luminaire Tested: DFN2DIP-TR3F0-070D040US935-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920836
REPORT IS A COMBINATION OF REPORTS P900293 AND P897195
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-070D040US935-FLLFLL
Description: 3 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

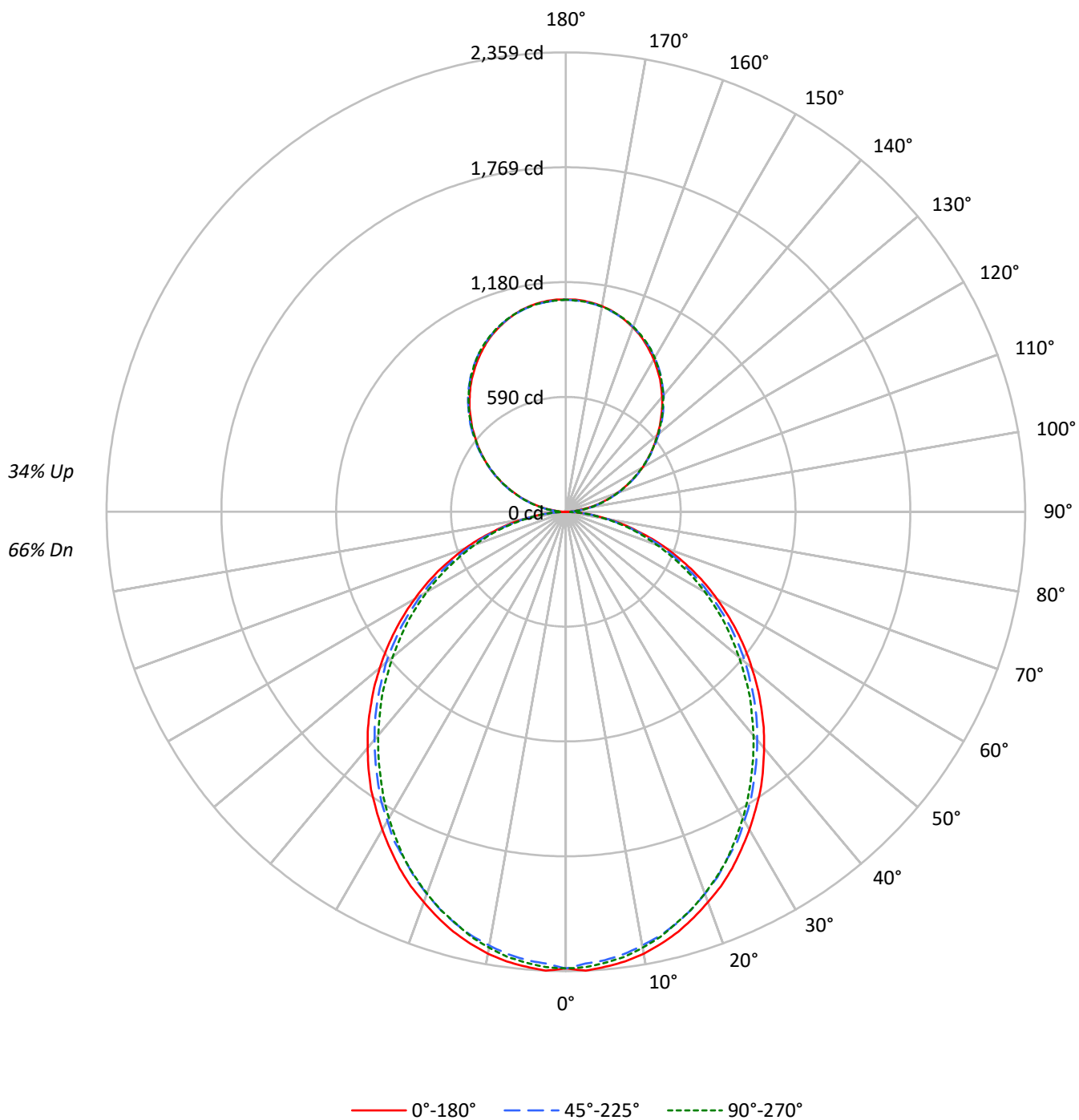
Lumens per Lamp: N/A
Luminaire Lumens: 9014.7 lumens
Efficiency: N/A
Efficacy: 90.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: Semi-Direct

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

TEST NUMBER: P920836

CATALOG NUMBER: DFN2DIP-TR3F0-070D040US935-FLLFLL

Luminous Intensity Polar Plot



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CATALOG NUMBER: DFN2DIP-TR3F0-070D040US935-FLLFLL

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	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71
1	101	97	93	89	95	91	88	85	81	78	76	72	70	68	63	61	60
2	92	85	78	73	87	80	74	70	71	67	63	63	60	57	55	53	51
3	84	75	67	61	79	70	64	58	63	57	53	56	51	48	49	46	43
4	77	66	58	52	72	63	55	50	56	50	45	50	45	41	44	40	37
5	71	59	51	44	67	56	48	43	50	44	39	45	40	36	40	36	32
6	65	53	45	39	61	50	43	37	45	39	34	40	35	31	36	32	29
7	61	48	40	34	57	46	38	33	41	35	30	37	32	28	33	29	25
8	56	44	36	30	53	42	34	29	38	31	27	34	29	25	30	26	23
9	53	40	32	27	49	38	31	26	34	28	24	31	26	22	28	24	21
10	49	37	29	24	46	35	28	24	32	26	22	29	24	20	26	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2922	2922	2922
5°	2925	2879	2899
10°	2900	2838	2858
15°	2856	2789	2795
20°	2796	2721	2730
25°	2738	2641	2655
30°	2664	2567	2561
35°	2594	2479	2462
40°	2509	2390	2367
45°	2423	2301	2270
50°	2330	2207	2157
55°	2231	2099	2053
60°	2120	1971	1935
65°	1999	1838	1794
70°	1844	1675	1643
75°	1631	1481	1500
80°	1372	1232	1233
85°	970	812	797

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2423 cd/sqm

TEST NUMBER: P920836

CATALOG NUMBER: DFN2DIP-TR3F0-070D040US935-FLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	220.7	2.4
10°-20°	621.0	6.9
20°-30°	912.7	10.1
30°-40°	1060.0	11.8
40°-50°	1058.7	11.7
50°-60°	923.2	10.2
60°-70°	682.4	7.6
70°-80°	386.1	4.3
80°-90°	105.0	1.2
90°-100°	67.4	0.7
100°-110°	214.2	2.4
110°-120°	366.5	4.1
120°-130°	482.0	5.3
130°-140°	541.0	6.0
140°-150°	530.5	5.9
150°-160°	445.0	4.9
160°-170°	295.1	3.3
170°-180°	103.2	1.1
0°-30°	1754.4	19.5
0°-40°	2814.4	31.2
0°-60°	4796.3	53.2
0°-90°	5969.8	66.2
90°-120°	648.0	7.2
90°-150°	2201.5	24.4
90°-180°	3045.0	33.8
0°-180°	9014.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2345	2345	2345	2345	2345	
5°	2345	2336	2311	2329	2325	223
15°	2232	2219	2190	2199	2188	629
25°	2020	2002	1964	1969	1964	930
35°	1743	1721	1684	1671	1660	1089
45°	1418	1403	1369	1344	1335	1095
55°	1074	1060	1033	1006	994	960
65°	724	710	688	668	656	716
75°	379	374	363	350	354	404
85°	92	90	88	81	79	103
90°	1	12	32	30	31	9
95°	48	57	59	59	57	53
105°	198	200	202	204	204	209
115°	368	373	371	370	368	364
125°	535	543	540	538	537	478
135°	692	702	704	703	700	535
145°	840	846	852	853	849	525
155°	960	963	966	971	968	442
165°	1045	1044	1044	1050	1046	295
175°	1087	1085	1083	1089	1084	103
180°	1089	1089	1089	1089	1089	

TEST NUMBER: P920836

CATALOG NUMBER: DFN2DIP-TR3F0-070D040US935-FLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2345.1	2345.1	2345.1	2345.1	2345.1
2.5°	2358.8	2347.5	2322.6	2345.1	2340.8
5°	2345.1	2336.3	2311.4	2329.3	2325.0
7.5°	2329.3	2315.9	2291.0	2309.3	2304.7
10°	2304.7	2288.9	2261.8	2279.8	2273.1
12.5°	2270.7	2257.4	2230.3	2241.5	2237.0
15°	2232.5	2219.0	2189.6	2198.7	2187.5
17.5°	2185.0	2171.7	2142.2	2153.5	2142.2
20°	2133.1	2119.8	2088.2	2094.9	2086.0
22.5°	2081.5	2061.1	2031.7	2031.7	2027.1
25°	2020.5	2002.5	1964.3	1968.6	1964.3
27.5°	1952.7	1937.0	1907.8	1901.1	1889.8
30°	1885.3	1867.1	1833.4	1826.7	1817.6
32.5°	1813.0	1799.7	1763.5	1749.9	1740.8
35°	1743.2	1720.7	1684.5	1670.9	1659.7
37.5°	1664.2	1643.9	1607.7	1592.0	1580.7
40°	1583.1	1564.9	1528.8	1508.7	1499.6
42.5°	1504.2	1486.0	1450.1	1427.4	1413.9
45°	1418.5	1402.7	1368.7	1344.1	1335.0
47.5°	1335.0	1319.2	1283.1	1258.2	1244.8
50°	1247.0	1235.7	1204.1	1172.6	1161.3
52.5°	1161.3	1145.6	1116.4	1091.5	1075.6
55°	1073.5	1059.9	1032.9	1005.8	994.5
57.5°	985.5	974.2	944.8	917.7	908.7
60°	897.4	888.5	857.0	832.2	825.4
62.5°	811.7	796.0	773.5	751.0	741.9
65°	724.0	710.3	687.9	667.5	656.3
67.5°	633.8	622.3	602.2	586.4	577.3
70°	550.3	541.2	520.8	505.1	496.2
72.5°	464.6	455.6	444.3	428.5	421.8
75°	378.8	374.4	362.9	349.6	354.1
77.5°	302.2	293.1	288.5	281.8	275.2
80°	225.6	223.3	218.7	212.0	207.4
82.5°	153.3	153.3	151.2	142.2	142.2
85°	92.4	90.2	88.1	81.1	79.0
87.5°	40.6	36.2	31.6	24.9	22.5
90°	0.9	11.8	32.2	30.2	31.2
92.5°	20.3	27.6	28.6	29.5	29.5
95°	48.0	57.2	58.8	58.8	57.2
97.5°	79.8	88.3	92.0	92.0	92.0
100°	116.6	124.2	126.7	126.7	125.8
102.5°	155.3	160.9	164.5	165.5	164.5
105°	197.7	200.3	202.2	203.9	203.9
107.5°	239.7	243.7	243.7	244.3	239.7
110°	280.4	285.7	285.7	285.7	283.1



TEST NUMBER: P920836

CATALOG NUMBER: DFN2DIP-TR3F0-070D040US935-FLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	324.4	330.0	329.0	326.4	324.4
115°	367.7	373.1	371.3	370.4	367.7
117.5°	410.8	418.0	413.5	410.8	408.2
120°	454.2	461.3	454.2	454.2	451.2
122.5°	493.5	502.7	498.2	495.5	493.5
125°	534.9	543.1	540.5	537.5	536.6
127.5°	575.3	585.5	581.9	577.9	575.3
130°	613.0	624.9	623.3	621.3	617.7
132.5°	655.4	664.6	665.3	660.6	658.1
135°	691.9	702.1	704.0	703.0	700.4
137.5°	732.6	740.8	742.4	741.7	737.9
140°	768.4	776.6	781.2	781.2	777.6
142.5°	805.2	813.4	816.0	817.0	813.4
145°	840.0	846.5	851.8	852.8	849.2
147.5°	871.2	879.3	883.3	884.9	881.3
150°	903.4	909.0	912.6	915.5	912.6
152.5°	931.9	937.5	942.1	945.7	942.1
155°	960.4	963.1	966.0	970.7	967.7
157.5°	985.2	987.0	988.7	995.3	990.7
160°	1007.1	1009.1	1010.0	1015.6	1011.7
162.5°	1027.4	1027.4	1028.5	1034.7	1030.1
165°	1044.9	1043.9	1043.9	1050.4	1045.9
167.5°	1060.7	1057.6	1057.6	1064.3	1059.6
170°	1072.5	1069.8	1068.8	1075.4	1069.8
172.5°	1080.6	1078.1	1077.0	1083.7	1078.1
175°	1087.3	1084.6	1082.6	1089.2	1083.7
177.5°	1090.9	1088.2	1086.2	1091.8	1086.2
180°	1089.2	1089.2	1089.2	1089.2	1089.2

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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	12.32	13.35	13.13	14.18	15.20	11.89	12.92	12.70	13.75	14.77
	3H	13.99	14.91	14.80	15.75	16.79	13.52	14.44	14.33	15.28	16.32
	4H	14.57	15.45	15.41	16.29	17.35	14.11	14.98	14.94	15.82	16.88
	6H	14.98	15.78	15.82	16.63	17.70	14.51	15.31	15.35	16.16	17.23
	8H	15.08	15.85	15.94	16.72	17.79	14.61	15.38	15.47	16.25	17.32
	12H	15.13	15.86	15.99	16.73	17.83	14.66	15.39	15.52	16.25	17.35
4H	2H	12.80	13.67	13.64	14.52	15.57	12.46	13.33	13.30	14.17	15.23
	3H	14.67	15.40	15.52	16.28	17.35	14.28	15.01	15.13	15.89	16.96
	4H	15.38	16.05	16.25	16.92	18.02	14.98	15.65	15.85	16.52	17.62
	6H	15.90	16.47	16.78	17.37	18.48	15.50	16.07	16.37	16.97	18.07
	8H	16.05	16.59	16.93	17.48	18.60	15.64	16.18	16.52	17.07	18.19
	12H	16.13	16.61	17.03	17.52	18.64	15.71	16.19	16.61	17.11	18.23
8H	4H	15.59	16.13	16.47	17.02	18.14	15.23	15.77	16.11	16.66	17.78
	6H	16.22	16.66	17.13	17.60	18.71	15.86	16.30	16.77	17.24	18.36
	8H	16.43	16.83	17.35	17.76	18.89	16.07	16.46	16.99	17.39	18.53
	12H	16.57	16.91	17.49	17.83	19.02	16.19	16.54	17.11	17.46	18.64
12H	4H	15.58	16.07	16.48	16.98	18.10	15.23	15.72	16.14	16.63	17.75
	6H	16.25	16.64	17.17	17.57	18.70	15.90	16.29	16.82	17.22	18.36
	8H	16.49	16.84	17.41	17.76	18.94	16.14	16.48	17.06	17.40	18.59