

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: P920940

Luminaire Tested: DFN2DIP-TR4F0-040D110US935-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P920940
REPORT IS A COMBINATION OF REPORTS P900496 AND P897293
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-040D110US935-RLLFLL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

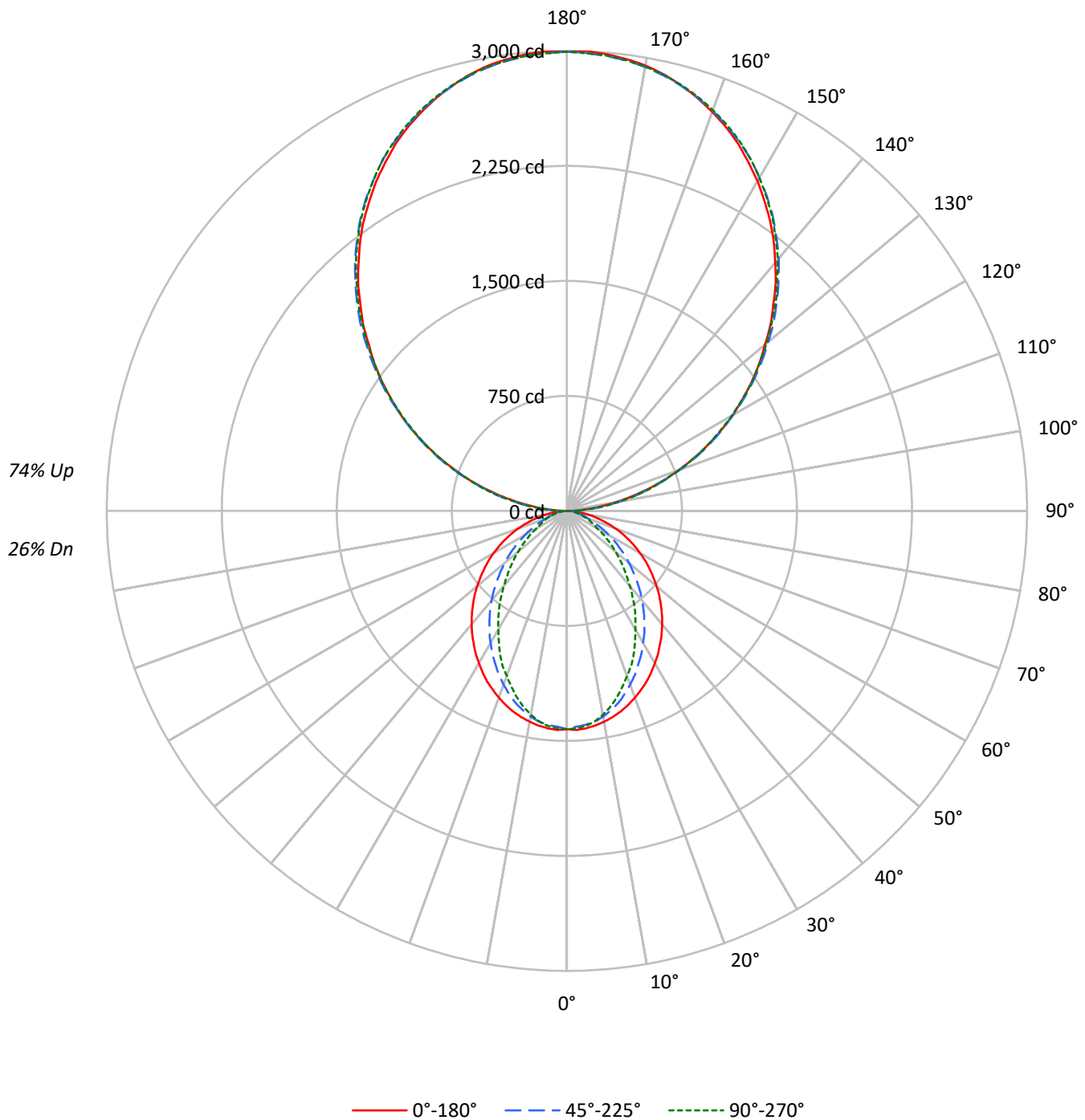
Lumens per Lamp: N/A
Luminaire Lumens: 11309.2 lumens
Efficiency: N/A
Efficacy: 96.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 116.7
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9952
Total Harmonic Distortion (THDi): 0.069
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P920940

CATALOG NUMBER: DFN2DIP-TR4F0-040D110US935-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P920940

CATALOG NUMBER: DFN2DIP-TR4F0-040D110US935-RLLFLL

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	101	101	101	101	90	90	90	90	70	70	70	51	51	51	34	34	34
1	93	89	85	82	82	79	76	73	62	60	58	45	44	43	30	30	29
2	85	78	72	67	75	69	65	61	54	51	48	40	38	36	27	26	25
3	77	68	61	56	69	61	55	51	48	44	41	36	33	31	24	23	21
4	71	61	53	47	63	54	48	43	43	38	35	32	29	27	22	20	19
5	65	54	46	41	58	48	42	37	38	34	30	29	26	23	20	18	16
6	60	48	41	35	53	43	37	32	34	30	26	26	23	20	18	16	15
7	55	43	36	31	49	39	33	28	31	26	23	24	20	18	16	14	13
8	51	39	32	27	46	36	29	25	28	24	20	21	18	16	15	13	12
9	47	36	29	24	42	32	26	22	26	21	18	20	17	14	14	12	11
10	44	33	26	21	40	30	24	20	24	19	16	18	15	13	13	11	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1131	1131	1131
5°	1133	1113	1120
10°	1121	1091	1083
15°	1106	1055	1027
20°	1086	1005	958
25°	1065	949	891
30°	1037	892	807
35°	1009	831	732
40°	981	767	647
45°	949	697	570
50°	915	626	494
55°	880	550	421
60°	839	470	347
65°	792	389	312
70°	736	314	282
75°	664	277	257
80°	561	232	223
85°	392	155	167

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2335 cd/sqm

TEST NUMBER: P920940

CATALOG NUMBER: DFN2DIP-TR4F0-040D110US935-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	133.4	1.2
10°-20°	366.2	3.2
20°-30°	514.2	4.5
30°-40°	560.5	5.0
40°-50°	515.1	4.6
50°-60°	404.5	3.6
60°-70°	263.3	2.3
70°-80°	135.6	1.2
80°-90°	43.1	0.4
90°-100°	185.3	1.6
100°-110°	588.9	5.2
110°-120°	1007.8	8.9
120°-130°	1325.4	11.7
130°-140°	1487.7	13.2
140°-150°	1458.9	12.9
150°-160°	1223.8	10.8
160°-170°	811.6	7.2
170°-180°	283.7	2.5
0°-30°	1013.8	9.0
0°-40°	1574.2	13.9
0°-60°	2493.9	22.1
0°-90°	2935.9	26.0
90°-120°	1782.1	15.8
90°-150°	6054.2	53.5
90°-180°	8373.0	74.0
0°-180°	11309.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1423	1423	1423	1423	1423	
5°	1423	1417	1400	1412	1408	135
15°	1354	1340	1296	1271	1259	382
25°	1229	1188	1103	1050	1030	565
35°	1059	993	880	799	770	663
45°	866	779	644	553	522	668
55°	658	558	419	341	317	588
65°	444	340	224	180	176	441
75°	237	147	103	94	93	251
85°	55	28	24	24	24	64
90°	3	32	88	83	86	11
95°	132	157	162	162	157	147
105°	544	551	556	561	561	574
115°	1011	1026	1021	1019	1011	1000
125°	1471	1494	1486	1478	1476	1315
135°	1903	1931	1936	1933	1926	1471
145°	2310	2328	2342	2345	2335	1443
155°	2641	2648	2657	2669	2661	1216
165°	2873	2871	2871	2889	2876	811
175°	2990	2983	2977	2995	2980	284
180°	2995	2995	2995	2995	2995	

TEST NUMBER: P920940

CATALOG NUMBER: DFN2DIP-TR4F0-040D110US935-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1423.4	1423.4	1423.4	1423.4	1423.4
2.5°	1429.9	1423.4	1409.2	1422.2	1419.5
5°	1423.4	1416.9	1400.2	1411.8	1408.0
7.5°	1411.8	1404.1	1386.1	1391.1	1384.7
10°	1396.4	1387.3	1361.6	1357.6	1350.0
12.5°	1377.1	1365.5	1330.6	1322.9	1308.7
15°	1353.8	1339.6	1295.9	1271.4	1258.6
17.5°	1326.8	1306.1	1252.0	1223.7	1203.1
20°	1295.9	1270.1	1205.7	1173.5	1145.1
22.5°	1262.4	1232.8	1158.0	1114.2	1095.0
25°	1228.9	1187.7	1102.6	1049.9	1030.4
27.5°	1189.0	1145.1	1051.1	990.6	960.9
30°	1146.5	1097.4	994.4	928.8	894.0
32.5°	1105.3	1045.9	940.4	863.1	830.8
35°	1058.9	993.2	879.9	798.7	770.2
37.5°	1013.8	942.9	823.1	734.2	702.1
40°	966.1	888.9	763.9	672.4	638.9
42.5°	917.1	834.7	704.6	609.2	577.1
45°	865.6	779.3	644.1	552.6	521.7
47.5°	816.7	725.3	586.2	494.6	466.3
50°	762.6	671.1	529.4	440.5	413.5
52.5°	709.7	613.1	475.4	390.3	365.8
55°	658.2	557.8	418.6	341.4	316.9
57.5°	605.5	502.4	368.4	296.3	275.7
60°	551.3	448.2	315.6	249.9	229.4
62.5°	498.6	395.5	270.4	208.7	198.5
65°	444.4	340.0	224.1	180.4	176.4
67.5°	393.0	288.5	180.4	158.4	154.5
70°	338.8	238.3	149.4	136.6	131.3
72.5°	287.3	191.9	124.9	114.7	112.1
75°	236.9	146.8	103.1	94.0	92.8
77.5°	186.8	104.3	81.2	76.0	73.4
80°	140.3	74.7	61.7	56.7	56.7
82.5°	97.9	50.3	42.5	39.9	39.9
85°	55.4	28.3	24.5	24.5	24.5
87.5°	20.7	10.2	10.2	9.0	9.0
90°	2.7	32.5	88.5	83.1	85.8
92.5°	56.0	75.9	78.5	81.3	81.3
95°	131.8	157.1	161.6	161.6	157.1
97.5°	219.5	242.9	252.9	252.9	252.9
100°	320.5	341.3	348.5	348.5	345.9
102.5°	427.1	442.5	452.5	455.1	452.5
105°	543.6	550.9	556.3	560.8	560.8
107.5°	659.2	670.0	670.0	671.8	659.2
110°	771.2	785.7	785.7	785.7	778.4

TEST NUMBER: P920940

CATALOG NUMBER: DFN2DIP-TR4F0-040D110US935-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	892.2	907.5	904.8	897.6	892.2
115°	1011.4	1025.8	1021.3	1018.6	1011.4
117.5°	1129.7	1149.5	1136.9	1129.7	1122.5
120°	1248.9	1268.8	1248.9	1248.9	1240.8
122.5°	1357.3	1382.5	1369.8	1362.6	1357.3
125°	1471.0	1493.6	1486.3	1478.2	1475.5
127.5°	1582.1	1610.1	1600.2	1589.3	1582.1
130°	1685.9	1718.5	1713.9	1708.5	1698.6
132.5°	1802.4	1827.7	1829.5	1816.9	1809.6
135°	1902.6	1930.6	1936.0	1933.4	1926.1
137.5°	2014.6	2037.2	2041.7	2039.9	2029.1
140°	2113.1	2135.6	2148.3	2148.3	2138.4
142.5°	2214.2	2236.8	2244.0	2246.7	2236.8
145°	2309.9	2328.0	2342.4	2345.1	2335.2
147.5°	2395.7	2418.3	2429.1	2433.6	2423.7
150°	2484.2	2499.6	2509.5	2517.6	2509.5
152.5°	2562.8	2578.1	2590.7	2600.7	2590.7
155°	2641.4	2648.5	2656.7	2669.4	2661.2
157.5°	2709.0	2714.5	2718.9	2737.0	2724.4
160°	2769.6	2775.0	2777.7	2793.1	2782.2
162.5°	2825.5	2825.5	2828.3	2845.4	2832.8
165°	2873.4	2870.7	2870.7	2888.7	2876.1
167.5°	2916.7	2908.6	2908.6	2926.7	2914.0
170°	2949.3	2942.0	2939.4	2957.4	2942.0
172.5°	2971.8	2964.6	2961.9	2980.0	2964.6
175°	2989.9	2982.7	2977.2	2995.3	2980.0
177.5°	2999.8	2992.6	2987.1	3002.6	2987.1
180°	2995.3	2995.3	2995.3	2995.3	2995.3

TEST NUMBER: P920940

CATALOG NUMBER: DFN2DIP-TR4F0-040D110US935-RLFL

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	4.74	5.41	5.89	6.54	8.12	0.72	1.38	1.86	2.51	4.09
	3H	6.41	7.00	7.56	8.14	9.74	1.89	2.49	3.05	3.63	5.22
	4H	7.01	7.58	8.17	8.71	10.31	2.34	2.90	3.50	4.04	5.64
	6H	7.42	7.94	8.59	9.08	10.69	2.65	3.17	3.82	4.31	5.92
	8H	7.54	8.04	8.71	9.19	10.80	2.74	3.23	3.91	4.39	5.99
	12H	7.60	8.07	8.77	9.22	10.84	2.78	3.25	3.95	4.40	6.02
4H	2H	4.74	5.31	5.91	6.45	8.05	1.29	1.86	2.46	3.00	4.60
	3H	6.56	7.03	7.73	8.19	9.80	2.63	3.10	3.80	4.26	5.88
	4H	7.24	7.68	8.42	8.83	10.46	3.17	3.60	4.34	4.76	6.39
	6H	7.75	8.12	8.93	9.29	10.91	3.58	3.95	4.76	5.13	6.75
	8H	7.92	8.27	9.10	9.43	11.07	3.71	4.05	4.89	5.22	6.86
	12H	8.01	8.32	9.20	9.50	11.14	3.77	4.08	4.96	5.26	6.90
8H	4H	7.20	7.54	8.38	8.71	10.35	3.44	3.78	4.62	4.95	6.59
	6H	7.76	8.04	8.95	9.25	10.88	3.95	4.24	5.15	5.45	7.08
	8H	7.97	8.22	9.18	9.41	11.06	4.14	4.39	5.35	5.58	7.23
	12H	8.10	8.32	9.31	9.51	11.19	4.26	4.47	5.46	5.66	7.34
12H	4H	7.14	7.46	8.34	8.63	10.27	3.44	3.75	4.63	4.93	6.57
	6H	7.73	7.98	8.93	9.17	10.82	4.00	4.25	5.20	5.44	7.09
	8H	7.95	8.16	9.15	9.35	11.03	4.20	4.42	5.41	5.61	7.29

END OF REPORT