

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: P921057

Luminaire Tested: DFN2DIP-TR4F0-080D040US935-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921057
REPORT IS A COMBINATION OF REPORTS P901898 AND P898849
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR4F0-080D040US935-RLLONL
Description: 4 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

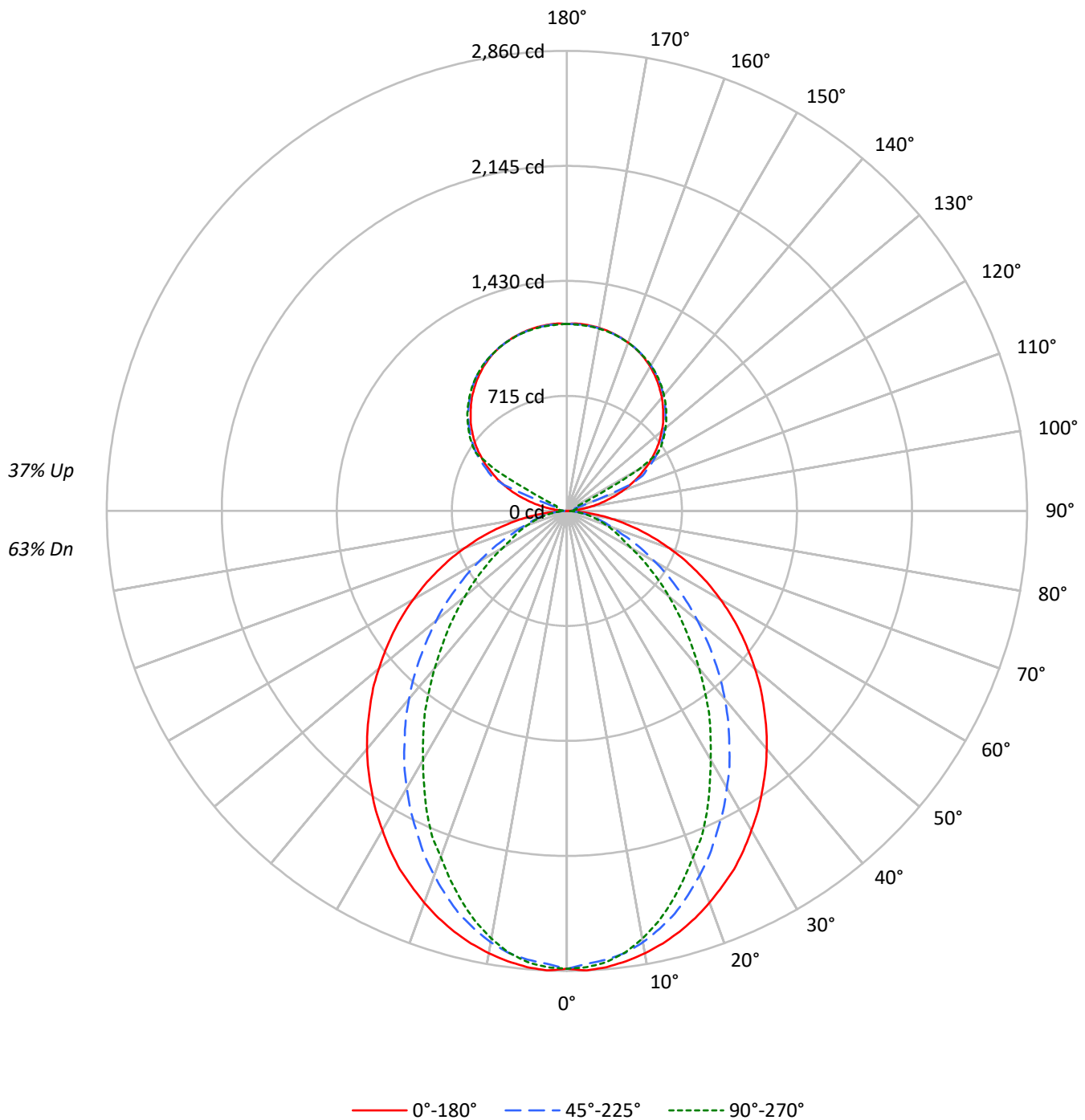
Lumens per Lamp: N/A
Luminaire Lumens: 9264.3 lumens
Efficiency: N/A
Efficacy: 87.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.43' x L: 3.96' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 105.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9957
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: P921057

CATALOG NUMBER: DFN2DIP-TR4F0-080D040US935-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P921057

CATALOG NUMBER: DFN2DIP-TR4F0-080D040US935-RLLONL

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	110	110	110	110	103	103	103	103	91	91	91	79	79	79	68	68	68
1	101	97	93	90	95	91	88	85	80	78	76	71	69	67	61	60	59
2	93	86	80	75	87	81	75	71	71	67	64	63	60	57	55	53	51
3	85	76	69	63	80	72	65	60	63	58	54	56	52	49	49	46	44
4	78	68	60	54	73	64	57	52	57	51	47	50	46	43	44	41	38
5	72	61	53	47	67	57	50	45	51	45	41	46	41	37	40	37	34
6	67	55	47	41	62	52	45	39	46	41	36	41	37	33	37	33	30
7	62	50	42	36	58	47	40	35	42	36	32	38	33	30	34	30	27
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	24
9	54	42	34	29	51	40	33	28	36	30	26	32	27	24	29	25	22
10	50	38	31	26	47	37	30	25	33	28	24	30	25	22	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2262	2262	2262
5°	2265	2226	2240
10°	2243	2182	2167
15°	2212	2110	2054
20°	2171	2010	1916
25°	2129	1899	1782
30°	2073	1785	1613
35°	2018	1662	1464
40°	1962	1535	1293
45°	1897	1394	1139
50°	1830	1251	988
55°	1760	1099	843
60°	1678	940	694
65°	1585	778	624
70°	1472	628	565
75°	1329	553	514
80°	1123	464	445
85°	783	309	334

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1897 cd/sqm

TEST NUMBER: P921057

CATALOG NUMBER: DFN2DIP-TR4F0-080D040US935-RLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	266.8	2.9
10°-20°	732.4	7.9
20°-30°	1028.3	11.1
30°-40°	1120.9	12.1
40°-50°	1030.3	11.1
50°-60°	809.1	8.7
60°-70°	526.6	5.7
70°-80°	271.1	2.9
80°-90°	71.3	0.8
90°-100°	38.3	0.4
100°-110°	142.9	1.5
110°-120°	378.9	4.1
120°-130°	628.5	6.8
130°-140°	667.6	7.2
140°-150°	620.4	6.7
150°-160°	498.8	5.4
160°-170°	321.4	3.5
170°-180°	110.6	1.2
0°-30°	2027.6	21.9
0°-40°	3148.5	34.0
0°-60°	4987.8	53.8
0°-90°	5856.9	63.2
90°-120°	560.1	6.0
90°-150°	2476.6	26.7
90°-180°	3407.0	36.8
0°-180°	9264.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2847	2847	2847	2847	2847	
5°	2847	2834	2800	2824	2816	270
15°	2708	2679	2592	2543	2517	763
25°	2458	2375	2205	2100	2061	1130
35°	2118	1986	1760	1597	1540	1326
45°	1731	1559	1288	1105	1043	1337
55°	1316	1116	837	683	634	1176
65°	889	680	448	361	353	881
75°	474	294	206	188	186	501
85°	111	57	49	49	49	127
90°	1	10	17	21	23	9
95°	55	27	33	37	36	65
105°	256	281	51	60	64	273
115°	484	498	519	130	69	476
125°	684	695	711	717	719	610
135°	846	860	867	876	874	654
145°	982	981	995	1001	997	614
155°	1081	1073	1083	1088	1082	498
165°	1139	1134	1136	1142	1136	322
175°	1165	1159	1161	1166	1158	111
180°	1162	1162	1162	1162	1162	

TEST NUMBER: P921057

CATALOG NUMBER: DFN2DIP-TR4F0-080D040US935-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2846.8	2846.8	2846.8	2846.8	2846.8
2.5°	2859.6	2846.8	2818.4	2844.3	2839.1
5°	2846.8	2834.0	2800.3	2823.6	2815.9
7.5°	2823.6	2808.2	2772.2	2782.3	2769.4
10°	2792.6	2774.7	2723.3	2715.3	2700.0
12.5°	2754.2	2730.9	2661.2	2645.8	2617.4
15°	2707.7	2679.3	2591.8	2542.9	2517.1
17.5°	2653.5	2612.3	2504.0	2447.5	2406.1
20°	2591.8	2540.1	2411.4	2347.2	2290.3
22.5°	2524.8	2465.5	2316.0	2228.5	2189.9
25°	2457.8	2375.3	2205.3	2099.8	2061.0
27.5°	2378.0	2290.3	2102.2	1981.2	1921.8
30°	2293.0	2194.9	1988.8	1857.6	1787.9
32.5°	2210.4	2091.9	1880.8	1726.1	1661.6
35°	2117.8	1986.3	1759.7	1597.4	1540.5
37.5°	2027.6	1885.8	1646.3	1468.3	1404.1
40°	1932.3	1777.8	1527.7	1344.8	1277.8
42.5°	1834.4	1669.6	1409.3	1218.6	1154.3
45°	1731.3	1558.6	1288.2	1105.1	1043.4
47.5°	1633.5	1450.6	1172.3	989.2	932.6
50°	1525.2	1342.4	1058.9	881.0	827.1
52.5°	1419.4	1226.1	950.6	780.7	731.8
55°	1316.4	1115.5	837.2	682.8	633.9
57.5°	1210.9	1004.8	736.9	592.6	551.3
60°	1102.6	896.6	631.1	499.9	458.7
62.5°	997.1	791.0	541.0	417.4	396.9
65°	888.9	680.0	448.2	360.8	352.8
67.5°	785.8	577.0	360.8	316.8	309.2
70°	677.6	476.7	298.8	273.0	262.7
72.5°	574.5	383.7	249.9	229.4	224.1
75°	474.0	293.6	206.1	188.0	185.6
77.5°	373.7	208.5	162.4	152.0	146.8
80°	280.7	149.6	123.6	113.4	113.4
82.5°	195.7	100.6	85.0	79.8	79.8
85°	110.7	56.6	48.9	48.9	48.9
87.5°	41.2	20.5	20.5	18.1	18.1
90°	0.8	10.1	16.8	21.1	22.6
92.5°	21.1	17.7	20.1	21.9	22.6
95°	54.6	26.9	32.7	37.0	36.2
97.5°	98.4	29.4	42.9	45.5	46.2
100°	148.9	33.7	48.0	54.6	56.3
102.5°	204.3	202.8	49.6	58.8	61.4
105°	255.6	280.9	51.3	60.5	63.9
107.5°	315.4	336.4	53.0	62.3	65.6
110°	372.6	390.2	147.2	63.1	66.4

TEST NUMBER: P921057

CATALOG NUMBER: DFN2DIP-TR4F0-080D040US935-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	426.5	441.5	427.2	64.7	67.3
115°	483.5	497.8	518.9	129.5	69.1
117.5°	533.2	550.0	564.4	444.0	223.7
120°	588.8	601.3	616.5	626.6	513.1
122.5°	635.8	649.3	666.2	671.1	672.0
125°	683.7	694.7	710.7	716.6	719.1
127.5°	727.5	739.3	751.9	760.3	761.1
130°	768.7	782.2	791.3	800.6	799.9
132.5°	810.7	821.7	830.9	838.5	837.8
135°	846.1	859.6	867.1	875.5	873.9
137.5°	883.0	893.1	901.6	910.0	907.5
140°	919.2	926.0	935.2	942.8	938.6
142.5°	949.6	955.4	966.4	973.0	968.9
145°	981.5	980.7	994.9	1000.8	996.6
147.5°	1009.2	1006.7	1021.0	1025.2	1021.9
150°	1036.1	1030.3	1043.8	1048.8	1044.6
152.5°	1058.9	1052.1	1064.7	1069.8	1063.9
155°	1080.7	1073.2	1083.3	1088.3	1081.6
157.5°	1098.4	1091.7	1099.3	1105.2	1098.4
160°	1113.5	1108.4	1113.5	1118.5	1112.7
162.5°	1127.0	1122.0	1126.2	1132.0	1124.5
165°	1138.8	1133.8	1136.3	1142.1	1136.3
167.5°	1148.1	1142.9	1145.6	1151.4	1143.8
170°	1155.6	1150.6	1152.2	1158.1	1150.6
172.5°	1160.6	1155.6	1157.4	1163.2	1155.6
175°	1164.8	1158.9	1160.6	1166.5	1158.1
177.5°	1166.5	1160.6	1161.5	1167.4	1159.9
180°	1162.3	1162.3	1162.3	1162.3	1162.3

TEST NUMBER: P921057

CATALOG NUMBER: DFN2DIP-TR4F0-080D040US935-RLONL

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	11.13	12.08	11.97	12.94	14.01	7.10	8.05	7.95	8.91	9.99
	3H	12.82	13.67	13.67	14.54	15.63	8.30	9.15	9.16	10.02	11.12
	4H	13.43	14.23	14.30	15.11	16.22	8.76	9.56	9.63	10.44	11.55
	6H	13.86	14.60	14.74	15.48	16.60	9.09	9.83	9.97	10.71	11.83
	8H	13.99	14.69	14.88	15.59	16.71	9.18	9.88	10.07	10.78	11.91
	12H	14.05	14.72	14.95	15.62	16.76	9.23	9.90	10.13	10.79	11.94
4H	2H	11.16	11.97	12.04	12.84	13.95	7.71	8.52	8.59	9.39	10.50
	3H	13.00	13.67	13.89	14.58	15.70	9.08	9.74	9.96	10.65	11.77
	4H	13.70	14.31	14.60	15.21	16.36	9.63	10.23	10.53	11.14	12.29
	6H	14.22	14.74	15.13	15.67	16.82	10.06	10.58	10.97	11.51	12.66
	8H	14.40	14.89	15.31	15.81	16.97	10.19	10.67	11.10	11.60	12.76
	12H	14.50	14.94	15.43	15.88	17.05	10.26	10.70	11.19	11.64	12.81
8H	4H	13.68	14.16	14.59	15.09	16.25	9.92	10.41	10.83	11.33	12.49
	6H	14.25	14.65	15.19	15.61	16.78	10.44	10.84	11.38	11.81	12.97
	8H	14.46	14.82	15.42	15.78	16.96	10.63	10.99	11.59	11.95	13.13
	12H	14.61	14.92	15.56	15.87	17.10	10.76	11.07	11.71	12.02	13.25
12H	4H	13.63	14.07	14.57	15.01	16.18	9.93	10.37	10.86	11.31	12.48
	6H	14.22	14.58	15.17	15.53	16.72	10.49	10.85	11.44	11.80	12.99
	8H	14.45	14.76	15.40	15.71	16.94	10.71	11.02	11.66	11.97	13.20