

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: P912509

Luminaire Tested: DFN2DIP-TR2F0-050D030US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P912509
REPORT IS A COMBINATION OF REPORTS P901757 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-050D030US850-FLLONL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

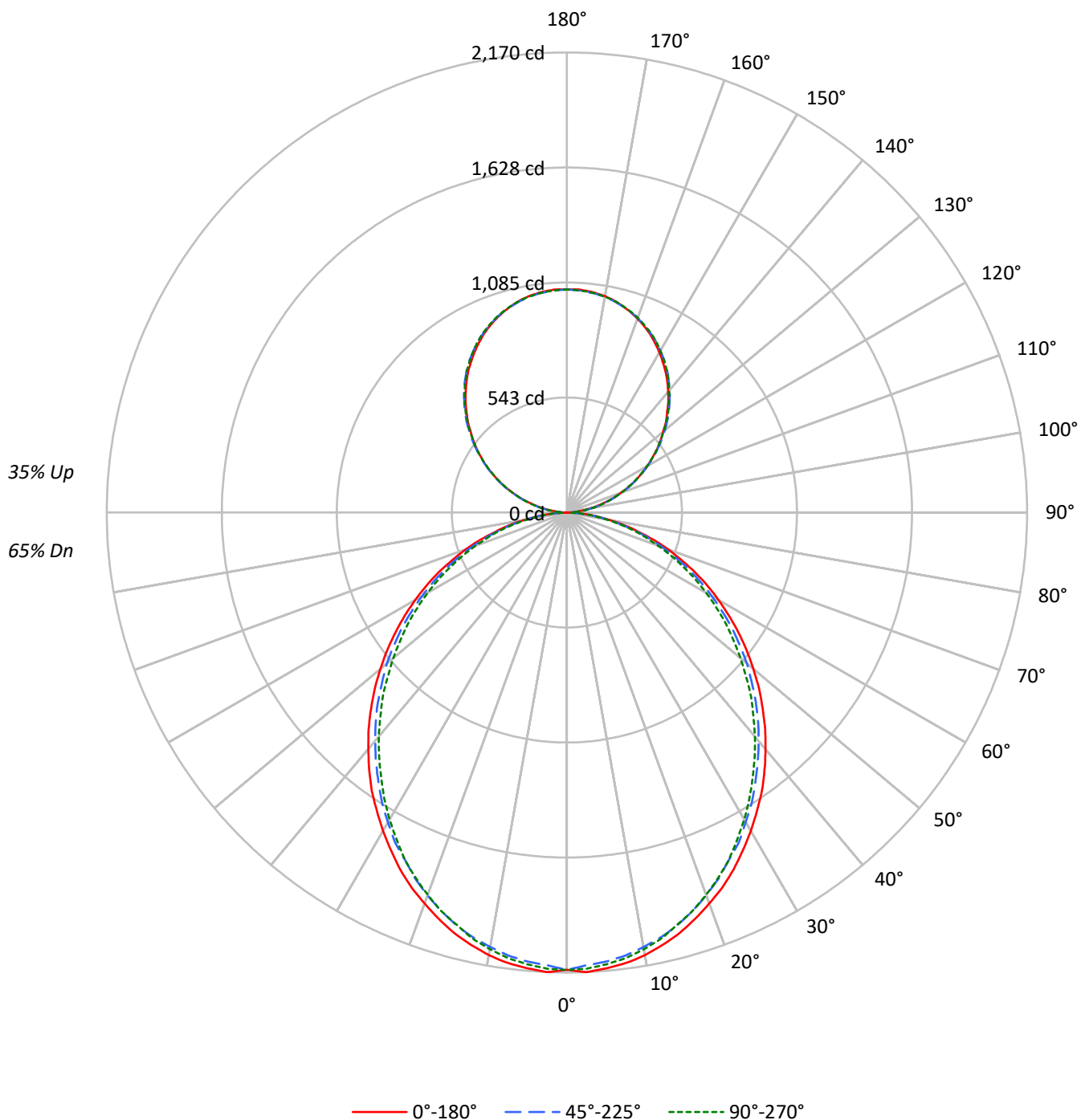
Lumens per Lamp: N/A
Luminaire Lumens: 8433.9 lumens
Efficiency: N/A
Efficacy: 121.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 69.3
Input Voltage (V): 120
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

TEST NUMBER: P912509

CATALOG NUMBER: DFN2DIP-TR2F0-050D030US850-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P912509

CATALOG NUMBER: DFN2DIP-TR2F0-050D030US850-FLONL

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	80	80	80	70	70	70
1	101	97	93	89	95	91	88	84	81	78	75	71	69	67	62	60	59
2	92	85	78	73	86	80	74	69	71	66	63	62	59	56	55	52	50
3	84	74	67	61	79	70	63	58	62	57	53	55	51	47	48	45	42
4	77	66	58	52	72	62	55	49	55	50	45	49	44	41	43	40	37
5	71	59	50	44	66	56	48	42	50	44	39	44	39	35	39	35	32
6	65	53	45	39	61	50	43	37	45	39	34	40	35	31	35	31	28
7	60	48	40	34	57	45	38	33	41	35	30	36	31	28	32	28	25
8	56	44	36	30	53	41	34	29	37	31	27	33	28	25	30	26	22
9	52	40	32	27	49	38	31	26	34	28	24	31	26	22	27	23	20
10	49	37	29	24	46	35	28	23	32	26	22	28	24	20	25	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4812	4812	4812
5°	4813	4734	4769
10°	4767	4660	4696
15°	4689	4573	4587
20°	4588	4455	4476
25°	4486	4317	4348
30°	4361	4188	4189
35°	4241	4037	4020
40°	4096	3885	3859
45°	3949	3731	3693
50°	3790	3570	3503
55°	3622	3383	3326
60°	3432	3164	3123
65°	3223	2934	2884
70°	2958	2654	2625
75°	2593	2319	2374
80°	2150	1892	1919
85°	1464	1193	1192

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3949 cd/sqm

TEST NUMBER: P912509

CATALOG NUMBER: DFN2DIP-TR2F0-050D030US850-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	203.1	2.4
10°-20°	571.4	6.8
20°-30°	839.7	10.0
30°-40°	975.2	11.6
40°-50°	974.0	11.5
50°-60°	849.3	10.1
60°-70°	627.9	7.4
70°-80°	355.2	4.2
80°-90°	96.8	1.1
90°-100°	65.1	0.8
100°-110°	206.9	2.5
110°-120°	354.0	4.2
120°-130°	465.6	5.5
130°-140°	522.6	6.2
140°-150°	512.5	6.1
150°-160°	429.9	5.1
160°-170°	285.1	3.4
170°-180°	99.7	1.2
0°-30°	1614.1	19.1
0°-40°	2589.4	30.7
0°-60°	4412.7	52.3
0°-90°	5492.6	65.1
90°-120°	626.0	7.4
90°-150°	2126.7	25.2
90°-180°	2941.0	34.9
0°-180°	8433.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2158	2158	2158	2158	2158	
5°	2158	2150	2126	2143	2139	205
15°	2054	2042	2014	2023	2012	578
25°	1859	1842	1807	1811	1807	855
35°	1604	1583	1550	1537	1527	1001
45°	1305	1290	1259	1237	1228	1007
55°	988	975	950	925	915	883
65°	666	654	633	614	604	659
75°	348	344	334	322	326	372
85°	85	83	81	75	73	95
90°	1	11	31	29	30	8
95°	46	55	57	57	55	52
105°	191	194	195	197	197	202
115°	355	360	359	358	355	351
125°	517	525	522	519	518	462
135°	668	678	680	679	677	517
145°	812	818	823	824	820	507
155°	928	930	933	938	935	427
165°	1009	1008	1008	1015	1010	285
175°	1050	1048	1046	1052	1047	100
180°	1052	1052	1052	1052	1052	

TEST NUMBER: P912509

CATALOG NUMBER: DFN2DIP-TR2F0-050D030US850-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2157.6	2157.6	2157.6	2157.6	2157.6
2.5°	2170.1	2159.8	2136.9	2157.6	2153.7
5°	2157.6	2149.5	2126.5	2143.0	2139.2
7.5°	2143.0	2130.7	2107.9	2124.6	2120.4
10°	2120.4	2105.9	2081.0	2097.5	2091.4
12.5°	2089.1	2076.8	2052.0	2062.3	2058.1
15°	2053.9	2041.6	2014.5	2022.9	2012.5
17.5°	2010.3	1998.0	1970.9	1981.2	1970.9
20°	1962.6	1950.3	1921.2	1927.3	1919.2
22.5°	1915.0	1896.3	1869.2	1869.2	1865.0
25°	1858.9	1842.4	1807.1	1811.1	1807.1
27.5°	1796.6	1782.1	1755.2	1749.0	1738.7
30°	1734.5	1717.8	1686.8	1680.6	1672.3
32.5°	1668.0	1655.7	1622.5	1609.9	1601.6
35°	1603.7	1583.1	1549.8	1537.3	1527.0
37.5°	1531.1	1512.5	1479.2	1464.7	1454.3
40°	1456.6	1439.8	1406.5	1388.0	1379.7
42.5°	1383.9	1367.2	1334.1	1313.2	1300.9
45°	1305.1	1290.5	1259.3	1236.6	1228.2
47.5°	1228.2	1213.7	1180.5	1157.6	1145.3
50°	1147.3	1136.9	1107.9	1078.8	1068.4
52.5°	1068.4	1053.9	1027.0	1004.2	989.7
55°	987.7	975.1	950.2	925.3	915.0
57.5°	906.6	896.3	869.2	844.4	836.0
60°	825.7	817.6	788.5	765.5	759.4
62.5°	746.9	732.4	711.6	690.9	682.6
65°	666.1	653.5	632.8	614.2	603.7
67.5°	583.1	572.6	554.1	539.5	531.1
70°	506.3	497.9	479.2	464.7	456.6
72.5°	427.5	419.1	408.8	394.2	388.0
75°	348.4	344.5	333.9	321.6	325.8
77.5°	278.0	269.6	265.5	259.3	253.2
80°	207.6	205.4	201.2	195.1	190.9
82.5°	141.1	141.1	139.1	130.8	130.8
85°	84.9	83.0	81.0	74.6	72.6
87.5°	37.4	33.3	29.1	22.8	20.7
90°	1.0	11.4	31.1	29.2	30.2
92.5°	19.6	26.6	27.6	28.5	28.5
95°	46.4	55.2	56.8	56.8	55.2
97.5°	77.1	85.3	88.8	88.8	88.8
100°	112.6	119.9	122.4	122.4	121.5
102.5°	150.0	155.5	158.9	159.9	158.9
105°	191.0	193.5	195.4	197.0	197.0
107.5°	231.6	235.3	235.3	236.0	231.6
110°	270.9	276.0	276.0	276.0	273.5



TEST NUMBER: P912509

CATALOG NUMBER: DFN2DIP-TR2F0-050D030US850-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	313.4	318.8	317.8	315.3	313.4
115°	355.3	360.3	358.8	357.9	355.3
117.5°	396.8	403.8	399.4	396.8	394.2
120°	438.7	445.7	438.7	438.7	435.8
122.5°	476.8	485.6	481.2	478.6	476.8
125°	516.8	524.7	522.1	519.2	518.3
127.5°	555.7	565.6	562.2	558.3	555.7
130°	592.2	603.6	602.1	600.2	596.6
132.5°	633.1	642.0	642.7	638.2	635.7
135°	668.4	678.2	680.1	679.2	676.6
137.5°	707.7	715.6	717.2	716.6	712.8
140°	742.3	750.2	754.7	754.7	751.1
142.5°	777.9	785.7	788.3	789.3	785.7
145°	811.5	817.8	822.9	823.8	820.3
147.5°	841.6	849.5	853.3	854.9	851.4
150°	872.7	878.1	881.5	884.4	881.5
152.5°	900.3	905.6	910.0	913.6	910.0
155°	927.9	930.3	933.2	937.7	934.9
157.5°	951.6	953.5	955.2	961.5	957.1
160°	972.9	974.8	975.8	981.1	977.4
162.5°	992.6	992.6	993.6	999.5	995.1
165°	1009.4	1008.4	1008.4	1014.7	1010.3
167.5°	1024.6	1021.7	1021.7	1028.0	1023.6
170°	1036.0	1033.5	1032.6	1038.9	1033.5
172.5°	1043.9	1041.5	1040.5	1046.8	1041.5
175°	1050.3	1047.8	1045.9	1052.2	1046.8
177.5°	1053.8	1051.2	1049.3	1054.8	1049.3
180°	1052.2	1052.2	1052.2	1052.2	1052.2

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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	13.89	14.91	14.71	15.75	16.78	13.47	14.48	14.28	15.32	16.36
	3H	15.54	16.45	16.37	17.30	18.37	15.08	15.99	15.91	16.84	17.90
	4H	16.12	16.98	16.96	17.84	18.91	15.66	16.52	16.50	17.38	18.45
	6H	16.51	17.30	17.37	18.17	19.26	16.05	16.84	16.91	17.71	18.80
	8H	16.61	17.37	17.47	18.25	19.34	16.15	16.91	17.02	17.79	18.88
	12H	16.65	17.37	17.52	18.25	19.37	16.19	16.91	17.06	17.79	18.90
4H	2H	14.36	15.22	15.21	16.08	17.15	14.02	14.88	14.87	15.74	16.82
	3H	16.21	16.93	17.08	17.82	18.91	15.83	16.55	16.69	17.44	18.53
	4H	16.92	17.57	17.79	18.46	19.58	16.52	17.18	17.40	18.06	19.18
	6H	17.42	17.99	18.31	18.89	20.01	17.02	17.59	17.91	18.50	19.62
	8H	17.56	18.09	18.45	18.99	20.13	17.16	17.69	18.05	18.60	19.73
	12H	17.63	18.11	18.54	19.03	20.17	17.22	17.70	18.14	18.62	19.76
8H	4H	17.11	17.64	18.01	18.55	19.68	16.76	17.29	17.66	18.20	19.33
	6H	17.72	18.16	18.64	19.11	20.24	17.37	17.81	18.29	18.76	19.89
	8H	17.93	18.32	18.86	19.26	20.41	17.58	17.96	18.50	18.90	20.05
	12H	18.06	18.40	18.99	19.33	20.53	17.69	18.03	18.62	18.96	20.16
12H	4H	17.11	17.58	18.02	18.51	19.65	16.76	17.24	17.67	18.16	19.30
	6H	17.75	18.14	18.68	19.08	20.23	17.41	17.80	18.34	18.74	19.89
	8H	17.98	18.33	18.92	19.26	20.46	17.64	17.98	18.57	18.91	20.11

END OF REPORT