

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: P909737

Luminaire Tested: DFN2DIP-TR2F0-030D020US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P909737
REPORT IS A COMBINATION OF REPORTS P901743 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-030D020US840-FLLONL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

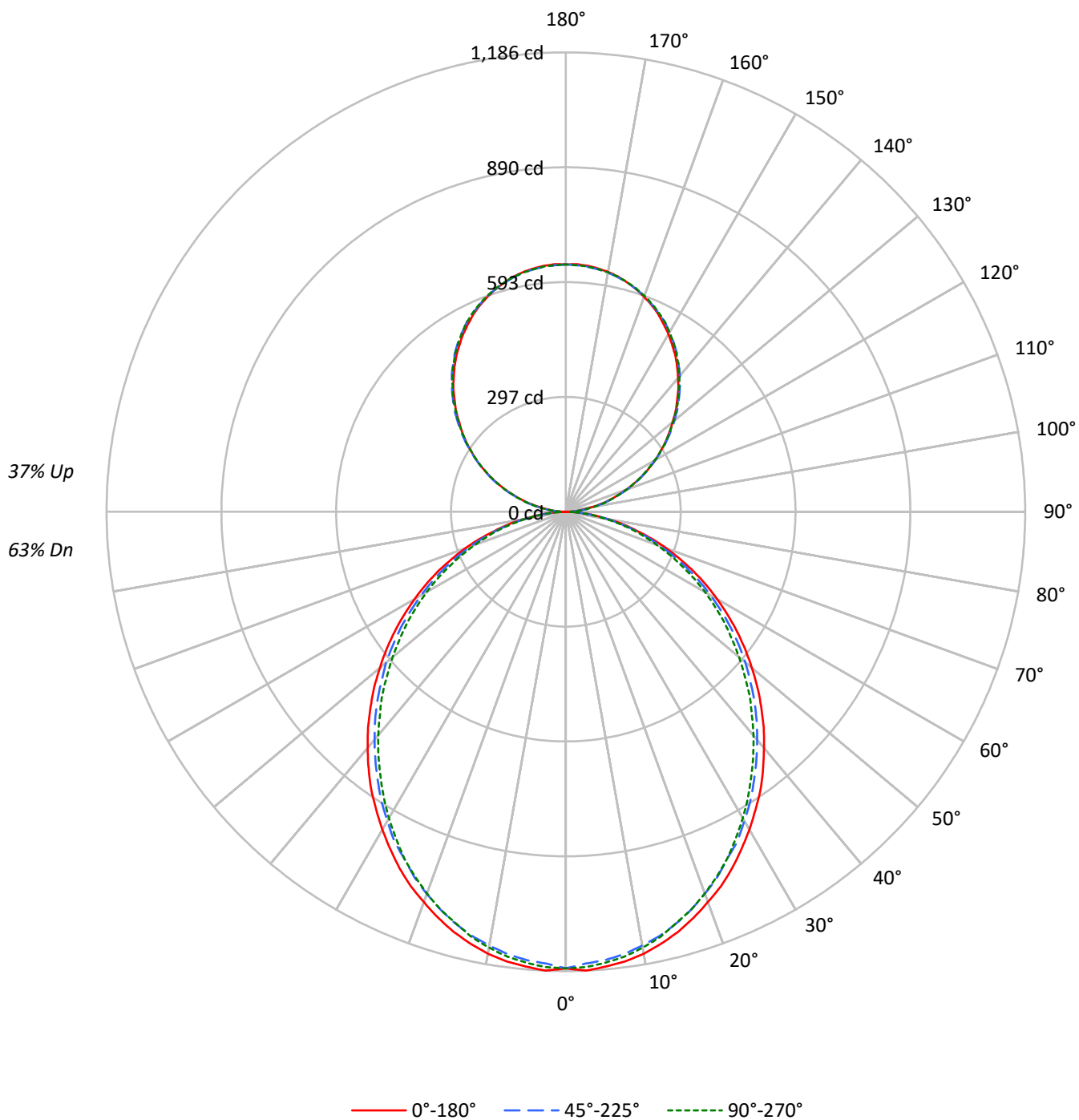
Lumens per Lamp: N/A
Luminaire Lumens: 4786.8 lumens
Efficiency: N/A
Efficacy: 118.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 40.5
Input Voltage (V): 120
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

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Luminous Intensity Polar Plot



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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	110	110	110	110	103	103	103	103	90	90	90	79	79	79	68	68	68
1	101	96	92	89	94	90	87	84	79	77	74	69	67	66	60	59	57
2	92	84	78	72	86	79	73	69	70	65	62	61	58	55	53	50	48
3	84	74	66	60	78	70	63	58	61	56	52	54	50	46	47	44	41
4	77	66	57	51	71	62	54	49	55	49	44	48	43	40	42	38	35
5	70	58	50	44	66	55	48	42	49	43	38	43	38	35	38	34	31
6	65	53	44	38	61	50	42	37	44	38	33	39	34	30	34	30	27
7	60	48	39	34	56	45	38	32	40	34	30	36	31	27	31	27	24
8	56	43	35	30	52	41	34	29	37	31	26	33	28	24	29	25	22
9	52	40	32	27	49	38	30	26	34	28	24	30	25	22	27	23	20
10	49	36	29	24	46	35	28	23	31	25	21	28	23	20	25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2629	2629	2629
5°	2630	2587	2606
10°	2604	2546	2566
15°	2562	2498	2506
20°	2507	2434	2445
25°	2451	2359	2376
30°	2383	2288	2288
35°	2317	2206	2196
40°	2238	2123	2109
45°	2158	2039	2018
50°	2070	1950	1914
55°	1979	1849	1817
60°	1875	1729	1707
65°	1761	1603	1576
70°	1616	1451	1434
75°	1417	1267	1297
80°	1174	1033	1049
85°	802	651	652

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2158 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.0	2.3
10°-20°	312.2	6.5
20°-30°	458.8	9.6
30°-40°	532.8	11.1
40°-50°	532.2	11.1
50°-60°	464.1	9.7
60°-70°	343.1	7.2
70°-80°	194.1	4.1
80°-90°	53.0	1.1
90°-100°	39.5	0.8
100°-110°	125.6	2.6
110°-120°	214.9	4.5
120°-130°	282.7	5.9
130°-140°	317.3	6.6
140°-150°	311.1	6.5
150°-160°	261.0	5.5
160°-170°	173.1	3.6
170°-180°	60.5	1.3
0°-30°	881.9	18.4
0°-40°	1414.7	29.6
0°-60°	2411.0	50.4
0°-90°	3001.2	62.7
90°-120°	380.0	7.9
90°-150°	1291.1	27.0
90°-180°	1786.0	37.3
0°-180°	4786.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1179	1179	1179	1179	1179	
5°	1179	1174	1162	1171	1169	112
15°	1122	1116	1101	1105	1100	316
25°	1016	1007	987	990	987	467
35°	876	865	847	840	834	547
45°	713	705	688	676	671	550
55°	540	533	519	506	500	482
65°	364	357	346	336	330	360
75°	190	188	182	176	178	203
85°	46	45	44	41	40	52
90°	1	7	19	18	18	5
95°	28	34	34	34	34	31
105°	116	117	119	120	120	122
115°	216	219	218	217	216	213
125°	314	318	317	315	315	280
135°	406	412	413	412	411	314
145°	493	496	500	500	498	308
155°	563	565	566	569	568	259
165°	613	612	612	616	613	173
175°	638	636	635	639	636	61
180°	639	639	639	639	639	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1178.8	1178.8	1178.8	1178.8	1178.8
2.5°	1185.7	1180.0	1167.5	1178.8	1176.7
5°	1178.8	1174.4	1161.9	1170.9	1168.7
7.5°	1170.9	1164.2	1151.7	1160.8	1158.5
10°	1158.5	1150.5	1137.0	1146.0	1142.7
12.5°	1141.5	1134.7	1121.2	1126.7	1124.5
15°	1122.2	1115.5	1100.7	1105.2	1099.5
17.5°	1098.3	1091.7	1076.8	1082.5	1076.8
20°	1072.3	1065.5	1049.7	1053.0	1048.5
22.5°	1046.3	1036.1	1021.3	1021.3	1019.0
25°	1015.6	1006.6	987.3	989.6	987.3
27.5°	981.6	973.6	959.0	955.6	950.0
30°	947.7	938.6	921.6	918.2	913.6
32.5°	911.4	904.6	886.5	879.6	875.0
35°	876.3	864.9	846.8	839.9	834.2
37.5°	836.6	826.4	808.2	800.2	794.6
40°	795.8	786.7	768.5	758.4	753.9
42.5°	756.1	747.0	728.9	717.5	710.7
45°	713.1	705.1	688.0	675.6	671.1
47.5°	671.1	663.2	645.0	632.5	625.7
50°	626.8	621.2	605.3	589.5	583.8
52.5°	583.8	575.8	561.2	548.7	540.7
55°	539.7	532.8	519.2	505.6	500.0
57.5°	495.3	489.7	474.9	461.3	456.8
60°	451.1	446.7	430.8	418.3	415.0
62.5°	408.1	400.1	388.8	377.5	372.9
65°	364.0	357.1	345.8	335.6	329.9
67.5°	318.6	312.9	302.7	294.8	290.2
70°	276.6	272.1	261.9	253.9	249.4
72.5°	233.6	228.9	223.3	215.4	212.1
75°	190.4	188.2	182.5	175.7	178.0
77.5°	151.9	147.3	145.0	141.7	138.4
80°	113.4	112.2	109.9	106.5	104.3
82.5°	77.1	77.1	76.0	71.4	71.4
85°	46.5	45.3	44.2	40.8	39.7
87.5°	20.4	18.2	15.9	12.5	11.3
90°	0.6	7.0	18.9	17.7	18.3
92.5°	11.9	16.2	16.8	17.4	17.4
95°	28.1	33.5	34.4	34.4	33.5
97.5°	46.8	51.8	53.9	53.9	53.9
100°	68.4	72.8	74.3	74.3	73.7
102.5°	91.1	94.3	96.4	97.0	96.4
105°	115.9	117.4	118.7	119.6	119.6
107.5°	140.6	142.9	142.9	143.3	140.6
110°	164.5	167.5	167.5	167.5	166.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	190.3	193.5	193.0	191.4	190.3
115°	215.7	218.7	217.8	217.2	215.7
117.5°	241.0	245.2	242.5	241.0	239.3
120°	266.3	270.5	266.3	266.3	264.6
122.5°	289.4	294.8	292.2	290.6	289.4
125°	313.7	318.5	317.0	315.3	314.7
127.5°	337.4	343.4	341.2	338.9	337.4
130°	359.5	366.5	365.5	364.4	362.2
132.5°	384.4	389.8	390.1	387.5	385.9
135°	405.8	411.7	412.8	412.3	410.7
137.5°	429.6	434.4	435.5	435.1	432.7
140°	450.6	455.4	458.2	458.2	456.1
142.5°	472.2	477.0	478.6	479.1	477.0
145°	492.6	496.4	499.6	500.1	498.0
147.5°	510.9	515.7	518.1	519.0	516.8
150°	529.8	533.0	535.1	536.8	535.1
152.5°	546.5	549.8	552.5	554.6	552.5
155°	563.3	564.8	566.5	569.3	567.5
157.5°	577.7	578.9	579.9	583.7	581.0
160°	590.7	591.8	592.4	595.6	593.3
162.5°	602.6	602.6	603.1	606.8	604.1
165°	612.8	612.2	612.2	616.0	613.4
167.5°	622.0	620.3	620.3	624.1	621.5
170°	628.9	627.4	626.8	630.7	627.4
172.5°	633.8	632.2	631.7	635.5	632.2
175°	637.6	636.1	634.9	638.7	635.5
177.5°	639.7	638.2	637.0	640.3	637.0
180°	638.7	638.7	638.7	638.7	638.7

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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	11.60	12.58	12.44	13.45	14.52	11.17	12.16	12.01	13.02	14.10
	3H	13.24	14.13	14.10	15.00	16.11	12.78	13.67	13.63	14.54	15.65
	4H	13.82	14.66	14.69	15.54	16.65	13.36	14.20	14.23	15.08	16.19
	6H	14.21	14.98	15.09	15.87	17.00	13.75	14.52	14.63	15.41	16.54
	8H	14.31	15.04	15.20	15.95	17.08	13.85	14.59	14.74	15.49	16.62
	12H	14.35	15.05	15.25	15.95	17.11	13.89	14.59	14.78	15.49	16.64
4H	2H	12.06	12.90	12.94	13.78	14.90	11.72	12.56	12.60	13.44	14.56
	3H	13.91	14.61	14.80	15.52	16.66	13.53	14.23	14.42	15.14	16.27
	4H	14.62	15.25	15.51	16.16	17.32	14.22	14.86	15.12	15.77	16.92
	6H	15.12	15.67	16.03	16.60	17.76	14.72	15.27	15.63	16.20	17.36
	8H	15.26	15.77	16.17	16.70	17.87	14.86	15.37	15.77	16.30	17.47
	12H	15.32	15.79	16.26	16.73	17.91	14.92	15.38	15.85	16.33	17.50
8H	4H	14.81	15.33	15.73	16.25	17.42	14.46	14.98	15.37	15.90	17.07
	6H	15.42	15.85	16.36	16.81	17.98	15.07	15.50	16.01	16.46	17.63
	8H	15.63	16.00	16.58	16.96	18.15	15.27	15.65	16.22	16.61	17.79
	12H	15.75	16.08	16.70	17.03	18.27	15.38	15.71	16.33	16.66	17.90
12H	4H	14.80	15.27	15.73	16.21	17.39	14.46	14.92	15.39	15.86	17.04
	6H	15.45	15.83	16.40	16.78	17.97	15.10	15.48	16.06	16.44	17.63
	8H	15.68	16.01	16.63	16.96	18.20	15.33	15.66	16.28	16.61	17.85