

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: P907650

Luminaire Tested: DFN2DIP-4P3F0-030D020US840-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907650
REPORT IS A COMBINATION OF REPORTS P899031 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-030D020US840-FLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

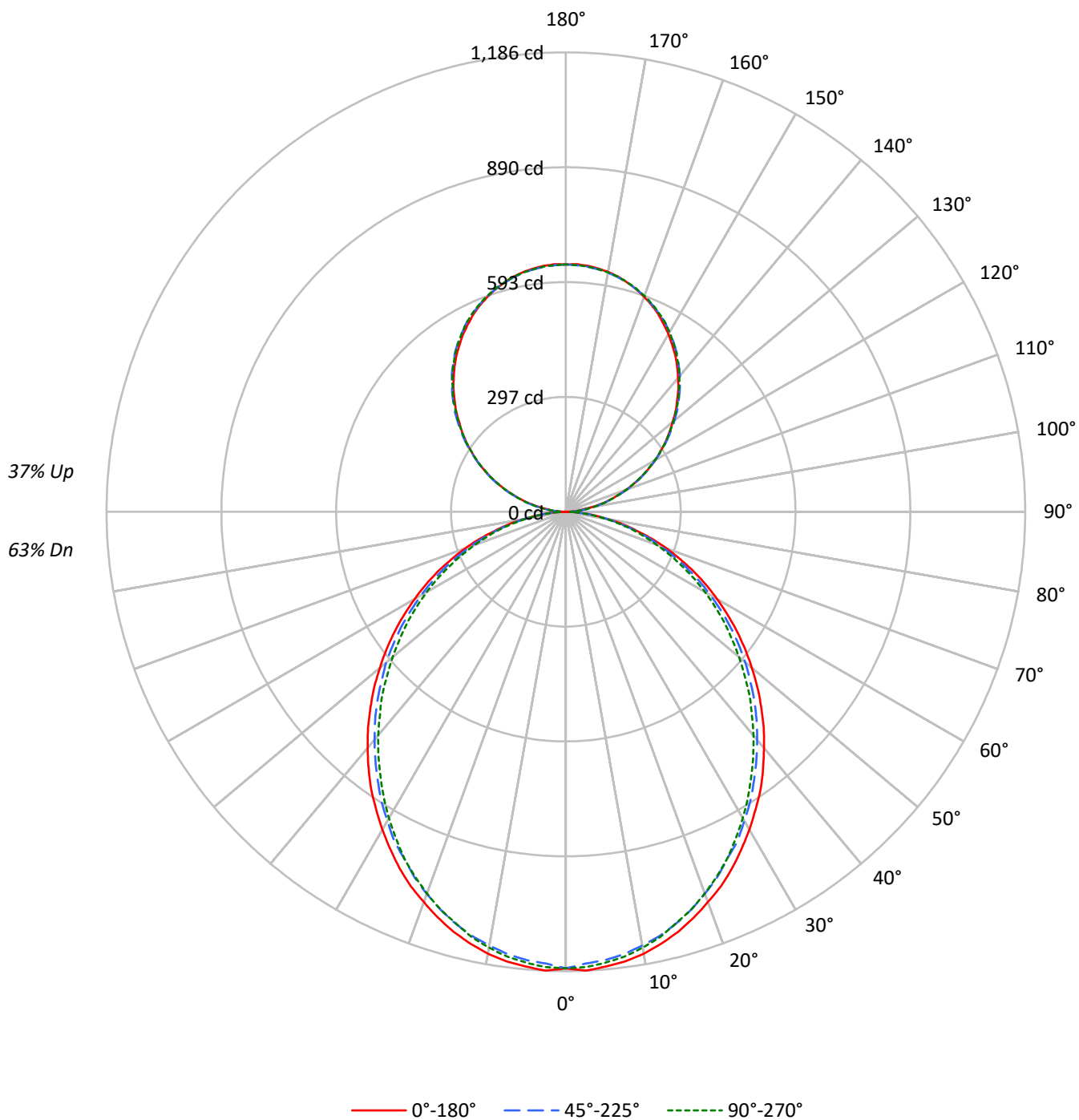
Lumens per Lamp: N/A
Luminaire Lumens: 4786.8 lumens
Efficiency: N/A
Efficacy: 115.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 41.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
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°	1343	1343	1343
5°	1345	1324	1333
10°	1333	1305	1315
15°	1313	1283	1286
20°	1285	1252	1257
25°	1258	1215	1223
30°	1224	1181	1180
35°	1192	1141	1135
40°	1152	1101	1092
45°	1113	1060	1047
50°	1070	1017	996
55°	1025	968	949
60°	973	909	895
65°	918	849	832
70°	846	775	763
75°	748	686	699
80°	628	572	578
85°	443	379	378

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1113 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	9.36	10.35	10.20	11.21	12.29	8.91	9.90	9.75	10.76	11.84
	3H	11.02	11.91	11.88	12.78	13.89	10.53	11.42	11.39	12.29	13.40
	4H	11.61	12.45	12.48	13.33	14.45	11.12	11.96	11.99	12.84	13.95
	6H	12.02	12.79	12.90	13.68	14.80	11.52	12.29	12.40	13.18	14.30
	8H	12.12	12.86	13.01	13.76	14.89	11.62	12.36	12.51	13.26	14.39
	12H	12.18	12.88	13.07	13.77	14.93	11.67	12.37	12.56	13.26	14.42
4H	2H	9.83	10.67	10.70	11.55	12.66	9.48	10.31	10.35	11.19	12.31
	3H	11.70	12.40	12.59	13.31	14.44	11.30	12.00	12.18	12.91	14.04
	4H	12.42	13.06	13.32	13.96	15.12	11.99	12.63	12.89	13.54	14.70
	6H	12.94	13.49	13.85	14.42	15.58	12.50	13.06	13.42	13.99	15.15
	8H	13.09	13.60	14.00	14.53	15.70	12.65	13.17	13.56	14.09	15.26
	12H	13.16	13.63	14.10	14.57	15.75	12.72	13.18	13.65	14.12	15.30
8H	4H	12.62	13.14	13.54	14.06	15.23	12.24	12.76	13.16	13.68	14.86
	6H	13.25	13.68	14.19	14.65	15.82	12.87	13.30	13.81	14.26	15.43
	8H	13.47	13.85	14.42	14.81	15.99	13.08	13.46	14.03	14.41	15.60
	12H	13.61	13.94	14.56	14.89	16.13	13.19	13.53	14.15	14.48	15.72
12H	4H	12.61	13.08	13.55	14.02	15.20	12.24	12.71	13.18	13.65	14.83
	6H	13.28	13.66	14.23	14.62	15.81	12.91	13.29	13.86	14.24	15.43
	8H	13.53	13.86	14.48	14.81	16.05	13.14	13.48	14.10	14.43	15.67