

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: P905616

Luminaire Tested: DFN2DIP-PN2F0-040D020US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905616
REPORT IS A COMBINATION OF REPORTS P899465 AND P896349
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-040D020US835-FLLFLL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

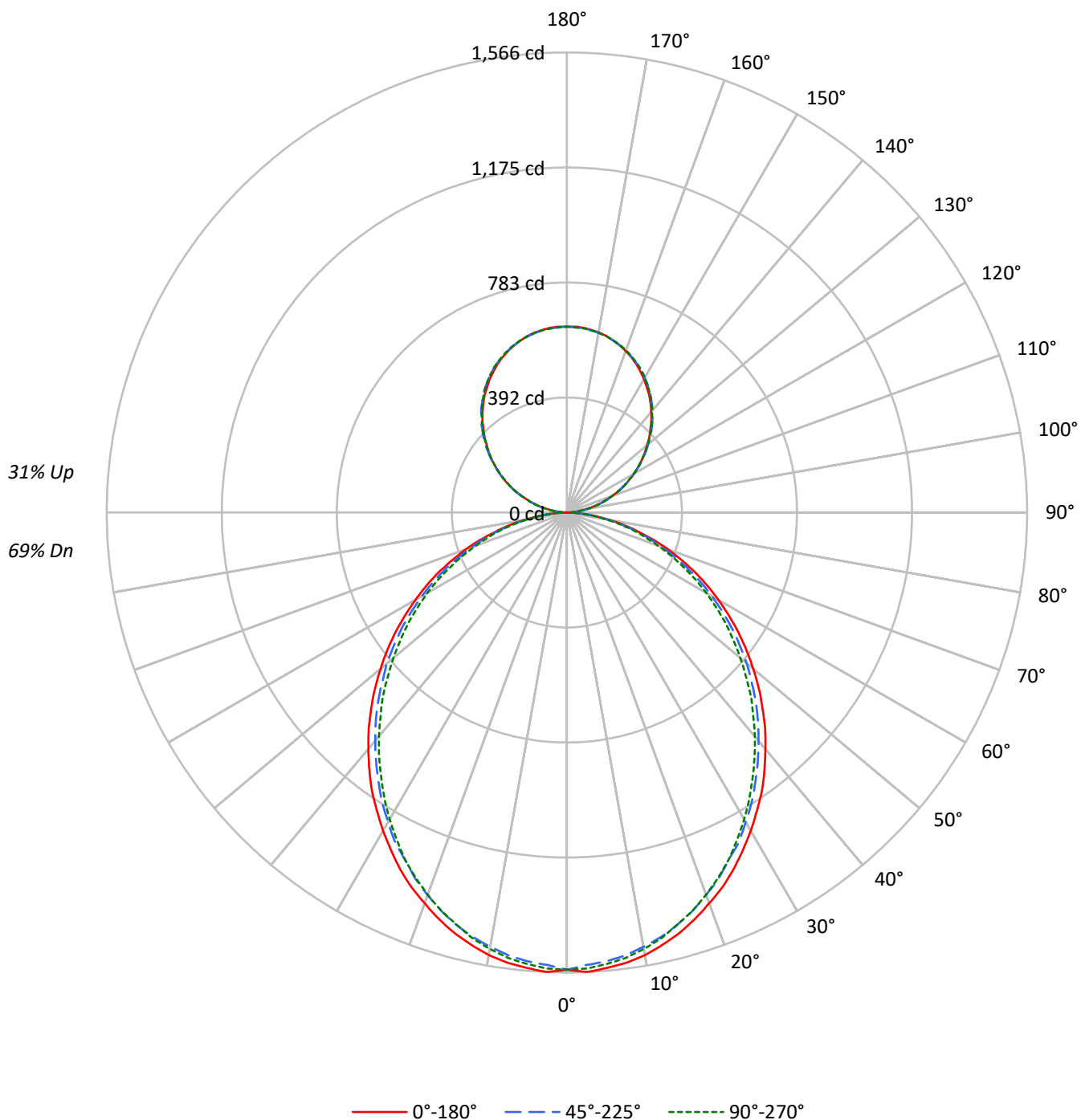
Lumens per Lamp: N/A
Luminaire Lumens: 5730.0 lumens
Efficiency: N/A
Efficacy: 103.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 55.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9613
Total Harmonic Distortion (THDi): 0.083
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	112	112	112	112	106	106	106	106	94	94	94	83	83	83	74	74	74
1	102	98	94	90	96	92	89	86	83	80	77	74	71	70	65	64	62
2	93	85	79	74	88	81	75	70	72	68	64	65	61	58	57	55	52
3	85	75	67	61	80	71	64	59	64	58	54	57	53	49	51	48	45
4	78	67	58	52	73	63	56	50	57	51	46	51	46	42	46	42	39
5	71	59	51	45	67	56	49	43	51	45	40	46	41	37	41	37	34
6	66	53	45	39	62	51	43	38	46	40	35	41	36	32	37	33	30
7	61	48	40	34	58	46	39	33	42	35	31	38	33	29	34	30	26
8	57	44	36	31	54	42	35	30	38	32	28	35	29	26	31	27	24
9	53	40	33	27	50	39	31	26	35	29	25	32	27	23	29	25	21
10	50	37	30	25	47	36	29	24	32	27	22	30	25	21	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3371	3371	3371
5°	3371	3317	3341
10°	3338	3265	3291
15°	3284	3204	3216
20°	3212	3122	3139
25°	3140	3026	3050
30°	3052	2936	2939
35°	2968	2830	2822
40°	2866	2724	2709
45°	2763	2616	2594
50°	2650	2504	2462
55°	2532	2373	2339
60°	2398	2220	2198
65°	2251	2059	2032
70°	2065	1864	1851
75°	1809	1630	1678
80°	1496	1331	1362
85°	1016	841	853

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2763 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	146.5	2.6
10°-20°	412.2	7.2
20°-30°	605.7	10.6
30°-40°	703.5	12.3
40°-50°	702.6	12.3
50°-60°	612.7	10.7
60°-70°	452.9	7.9
70°-80°	256.2	4.5
80°-90°	69.4	1.2
90°-100°	39.1	0.7
100°-110°	124.4	2.2
110°-120°	212.8	3.7
120°-130°	279.9	4.9
130°-140°	314.2	5.5
140°-150°	308.1	5.4
150°-160°	258.4	4.5
160°-170°	171.4	3.0
170°-180°	59.9	1.0
0°-30°	1164.4	20.3
0°-40°	1867.9	32.6
0°-60°	3183.2	55.6
0°-90°	3961.8	69.1
90°-120°	376.3	6.6
90°-150°	1278.5	22.3
90°-180°	1768.0	30.9
0°-180°	5730.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1556	1556	1556	1556	1556	
5°	1556	1550	1534	1546	1543	148
15°	1482	1473	1453	1459	1452	417
25°	1341	1329	1304	1306	1304	617
35°	1157	1142	1118	1109	1102	722
45°	941	931	908	892	886	727
55°	712	703	686	668	660	637
65°	480	471	456	443	436	475
75°	251	248	241	232	235	268
85°	61	60	58	54	52	68
90°	1	7	19	18	18	5
95°	28	33	34	34	33	31
105°	115	116	118	118	118	121
115°	214	217	216	215	214	211
125°	311	315	314	312	312	278
135°	402	408	409	408	407	311
145°	488	492	495	495	493	305
155°	558	559	561	564	562	257
165°	607	606	606	610	607	171
175°	631	630	629	632	629	60
180°	632	632	632	632	632	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1556.4	1556.4	1556.4	1556.4	1556.4
2.5°	1565.5	1558.0	1541.5	1556.4	1553.6
5°	1556.4	1550.5	1534.0	1545.9	1543.1
7.5°	1545.9	1537.0	1520.5	1532.6	1529.6
10°	1529.6	1519.1	1501.2	1513.1	1508.6
12.5°	1507.0	1498.1	1480.2	1487.7	1484.6
15°	1481.6	1472.7	1453.2	1459.2	1451.8
17.5°	1450.2	1441.3	1421.8	1429.2	1421.8
20°	1415.7	1406.8	1385.9	1390.3	1384.5
22.5°	1381.4	1367.9	1348.4	1348.4	1345.4
25°	1340.9	1329.0	1303.6	1306.5	1303.6
27.5°	1296.0	1285.5	1266.2	1261.7	1254.3
30°	1251.2	1239.2	1216.8	1212.3	1206.3
32.5°	1203.3	1194.4	1170.4	1161.4	1155.3
35°	1156.9	1142.0	1118.0	1109.0	1101.5
37.5°	1104.5	1091.0	1067.0	1056.6	1049.1
40°	1050.7	1038.6	1014.6	1001.3	995.3
42.5°	998.3	986.2	962.4	947.3	938.4
45°	941.4	931.0	908.4	892.1	886.0
47.5°	886.0	875.5	851.6	835.1	826.2
50°	827.6	820.1	799.2	778.2	770.7
52.5°	770.7	760.3	740.9	724.4	713.9
55°	712.5	703.4	685.5	667.5	660.1
57.5°	654.0	646.6	627.0	609.1	603.1
60°	595.6	589.7	568.8	552.3	547.8
62.5°	538.8	528.3	513.4	498.4	492.4
65°	480.5	471.4	456.5	443.0	435.6
67.5°	420.6	413.0	399.7	389.2	383.2
70°	365.2	359.2	345.7	335.2	329.3
72.5°	308.4	302.3	294.9	284.4	279.9
75°	251.4	248.5	240.9	232.0	235.0
77.5°	200.5	194.5	191.5	187.0	182.6
80°	149.7	148.1	145.1	140.7	137.7
82.5°	101.8	101.8	100.4	94.3	94.3
85°	61.3	59.9	58.4	53.8	52.4
87.5°	27.0	24.0	21.0	16.5	14.9
90°	0.6	6.9	18.7	17.5	18.1
92.5°	11.8	16.0	16.6	17.2	17.2
95°	27.8	33.2	34.1	34.1	33.2
97.5°	46.3	51.3	53.4	53.4	53.4
100°	67.7	72.1	73.6	73.6	73.0
102.5°	90.2	93.4	95.5	96.1	95.5
105°	114.8	116.3	117.5	118.4	118.4
107.5°	139.2	141.5	141.5	141.9	139.2
110°	162.9	165.9	165.9	165.9	164.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	188.4	191.6	191.1	189.5	188.4
115°	213.6	216.6	215.7	215.1	213.6
117.5°	238.6	242.8	240.1	238.6	237.0
120°	263.7	267.9	263.7	263.7	262.0
122.5°	286.6	291.9	289.3	287.8	286.6
125°	310.6	315.4	313.9	312.2	311.6
127.5°	334.1	340.0	337.9	335.6	334.1
130°	356.0	362.9	361.9	360.8	358.7
132.5°	380.6	386.0	386.3	383.7	382.1
135°	401.8	407.7	408.8	408.3	406.7
137.5°	425.4	430.2	431.2	430.8	428.5
140°	446.2	451.0	453.7	453.7	451.6
142.5°	467.6	472.3	473.9	474.4	472.3
145°	487.8	491.6	494.7	495.2	493.1
147.5°	505.9	510.7	513.0	513.9	511.8
150°	524.6	527.8	529.9	531.6	529.9
152.5°	541.2	544.4	547.1	549.2	547.1
155°	557.8	559.3	561.0	563.7	562.0
157.5°	572.1	573.2	574.2	578.0	575.3
160°	584.9	586.0	586.6	589.8	587.5
162.5°	596.7	596.7	597.2	600.9	598.2
165°	606.8	606.2	606.2	610.0	607.4
167.5°	615.9	614.2	614.2	618.0	615.4
170°	622.8	621.3	620.7	624.5	621.3
172.5°	627.6	626.0	625.5	629.3	626.0
175°	631.4	629.9	628.7	632.5	629.3
177.5°	633.5	632.0	630.8	634.0	630.8
180°	632.5	632.5	632.5	632.5	632.5

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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	12.98	14.04	13.75	14.84	15.81	12.54	13.61	13.32	14.40	15.37
	3H	14.64	15.59	15.42	16.40	17.40	14.15	15.11	14.94	15.92	16.92
	4H	15.22	16.12	16.02	16.94	17.95	14.74	15.64	15.54	16.45	17.46
	6H	15.61	16.45	16.43	17.27	18.29	15.13	15.96	15.94	16.78	17.81
	8H	15.72	16.51	16.54	17.35	18.37	15.23	16.02	16.05	16.86	17.89
	12H	15.76	16.52	16.60	17.35	18.41	15.27	16.03	16.10	16.86	17.91
4H	2H	13.46	14.36	14.26	15.17	16.18	13.11	14.01	13.91	14.82	15.83
	3H	15.32	16.07	16.14	16.92	17.94	14.92	15.67	15.74	16.52	17.54
	4H	16.02	16.71	16.86	17.55	18.61	15.61	16.29	16.44	17.14	18.19
	6H	16.53	17.12	17.38	17.99	19.05	16.11	16.70	16.96	17.57	18.63
	8H	16.67	17.23	17.53	18.09	19.17	16.25	16.81	17.10	17.67	18.74
	12H	16.75	17.25	17.62	18.13	19.21	16.31	16.81	17.19	17.70	18.78
8H	4H	16.22	16.78	17.08	17.64	18.72	15.85	16.41	16.71	17.28	18.35
	6H	16.84	17.30	17.72	18.21	19.28	16.47	16.93	17.35	17.83	18.90
	8H	17.05	17.46	17.94	18.36	19.45	16.67	17.08	17.56	17.98	19.07
	12H	17.18	17.54	18.07	18.43	19.57	16.78	17.14	17.67	18.03	19.17
12H	4H	16.22	16.72	17.09	17.60	18.68	15.86	16.36	16.73	17.24	18.32
	6H	16.87	17.27	17.76	18.18	19.26	16.50	16.91	17.40	17.81	18.90
	8H	17.10	17.46	18.00	18.35	19.50	16.73	17.09	17.63	17.99	19.13