

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: P904890

Luminaire Tested: DFN2DIP-4P2F0-040D020US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904890
REPORT IS A COMBINATION OF REPORTS P899015 AND P895899
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P2F0-040D020US835-FLLFLL
Description: 2 foot, 90deg - 4way Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

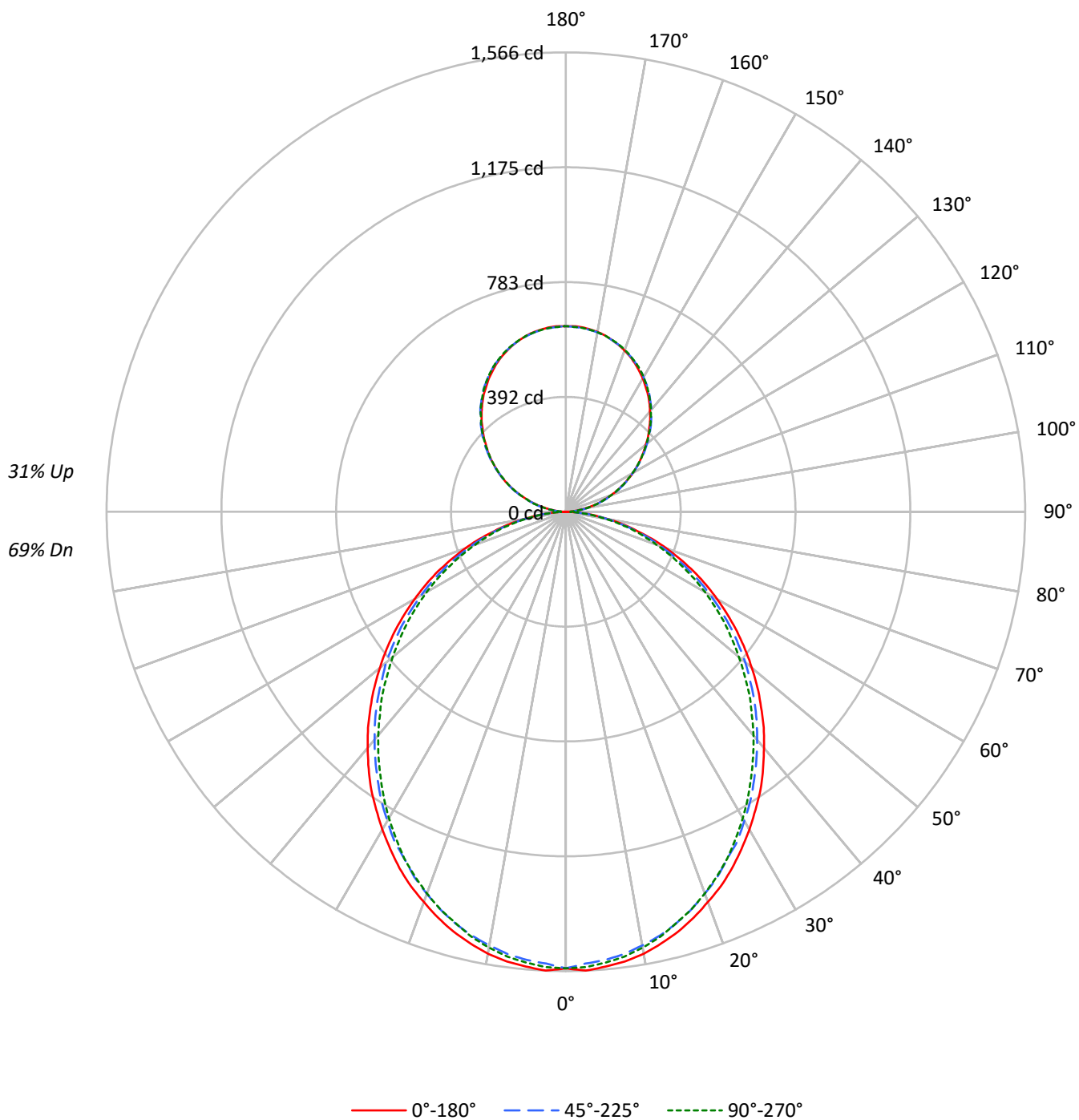
Lumens per Lamp: N/A
Luminaire Lumens: 5730.0 lumens
Efficiency: N/A
Efficacy: 102.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.07' x L: 2.07' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 56.1
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.983
Total Harmonic Distortion (THDi): 0.073
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			0
RW	70	50	30	10	70	50	30	10	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	69		
1	102	98	94	90	96	92	89	86	83	80	77	74	71	70	65	64	62	58		
2	93	85	79	74	88	81	75	70	72	68	64	65	61	58	57	55	52	49		
3	85	75	67	61	80	71	64	59	64	58	54	57	53	49	51	48	45	41		
4	78	67	58	52	73	63	56	50	57	51	46	51	46	42	46	42	39	35		
5	71	59	51	45	67	56	49	43	51	45	40	46	41	37	41	37	34	31		
6	66	53	45	39	62	51	43	38	46	40	35	41	36	32	37	33	30	27		
7	61	48	40	34	58	46	39	33	42	35	31	38	33	29	34	30	26	24		
8	57	44	36	31	54	42	35	30	38	32	28	35	29	26	31	27	24	22		
9	53	40	33	27	50	39	31	26	35	29	25	32	27	23	29	25	21	19		
10	50	37	30	25	47	36	29	24	32	27	22	30	25	21	27	23	20	18		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3897	3897	3897
5°	3896	3833	3862
10°	3856	3772	3803
15°	3792	3700	3716
20°	3707	3604	3626
25°	3623	3491	3522
30°	3520	3385	3393
35°	3421	3262	3257
40°	3301	3137	3127
45°	3180	3011	2993
50°	3049	2879	2839
55°	2910	2727	2696
60°	2753	2548	2532
65°	2580	2360	2339
70°	2361	2131	2129
75°	2061	1858	1927
80°	1695	1509	1559
85°	1135	943	970

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3180 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	13.47	14.53	14.24	15.33	16.30	13.02	14.09	13.80	14.88	15.85
	3H	15.12	16.08	15.91	16.88	17.88	14.63	15.59	15.42	16.39	17.39
	4H	15.70	16.60	16.50	17.42	18.43	15.21	16.11	16.01	16.92	17.93
	6H	16.09	16.93	16.91	17.75	18.77	15.59	16.43	16.41	17.25	18.27
	8H	16.19	16.99	17.02	17.83	18.85	15.69	16.49	16.52	17.33	18.35
	12H	16.24	17.00	17.07	17.83	18.88	15.73	16.49	16.57	17.33	18.38
4H	2H	13.94	14.84	14.75	15.66	16.67	13.58	14.49	14.39	15.30	16.31
	3H	15.80	16.55	16.62	17.40	18.42	15.39	16.14	16.21	16.99	18.02
	4H	16.50	17.19	17.33	18.03	19.09	16.08	16.76	16.91	17.61	18.66
	6H	17.01	17.60	17.86	18.47	19.53	16.57	17.17	17.42	18.04	19.10
	8H	17.15	17.70	18.00	18.57	19.64	16.71	17.27	17.57	18.13	19.20
	12H	17.22	17.72	18.09	18.61	19.68	16.77	17.27	17.65	18.16	19.24
8H	4H	16.70	17.26	17.55	18.12	19.19	16.32	16.88	17.18	17.74	18.81
	6H	17.31	17.77	18.19	18.68	19.75	16.93	17.39	17.81	18.29	19.37
	8H	17.52	17.93	18.41	18.83	19.92	17.13	17.53	18.02	18.44	19.52
	12H	17.64	18.00	18.54	18.90	20.04	17.23	17.59	18.13	18.49	19.63
12H	4H	16.69	17.19	17.57	18.08	19.15	16.32	16.82	17.20	17.71	18.78
	6H	17.34	17.75	18.23	18.65	19.74	16.96	17.37	17.86	18.27	19.36
	8H	17.57	17.93	18.47	18.82	19.97	17.19	17.55	18.09	18.44	19.58