

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: P904904

Luminaire Tested: DFN2DIP-4P3F0-020D020US835-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904904
REPORT IS A COMBINATION OF REPORTS P899030 AND P895917
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-4P3F0-020D020US835-RLLFLL
Description: 3 foot, 90deg - 4way Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

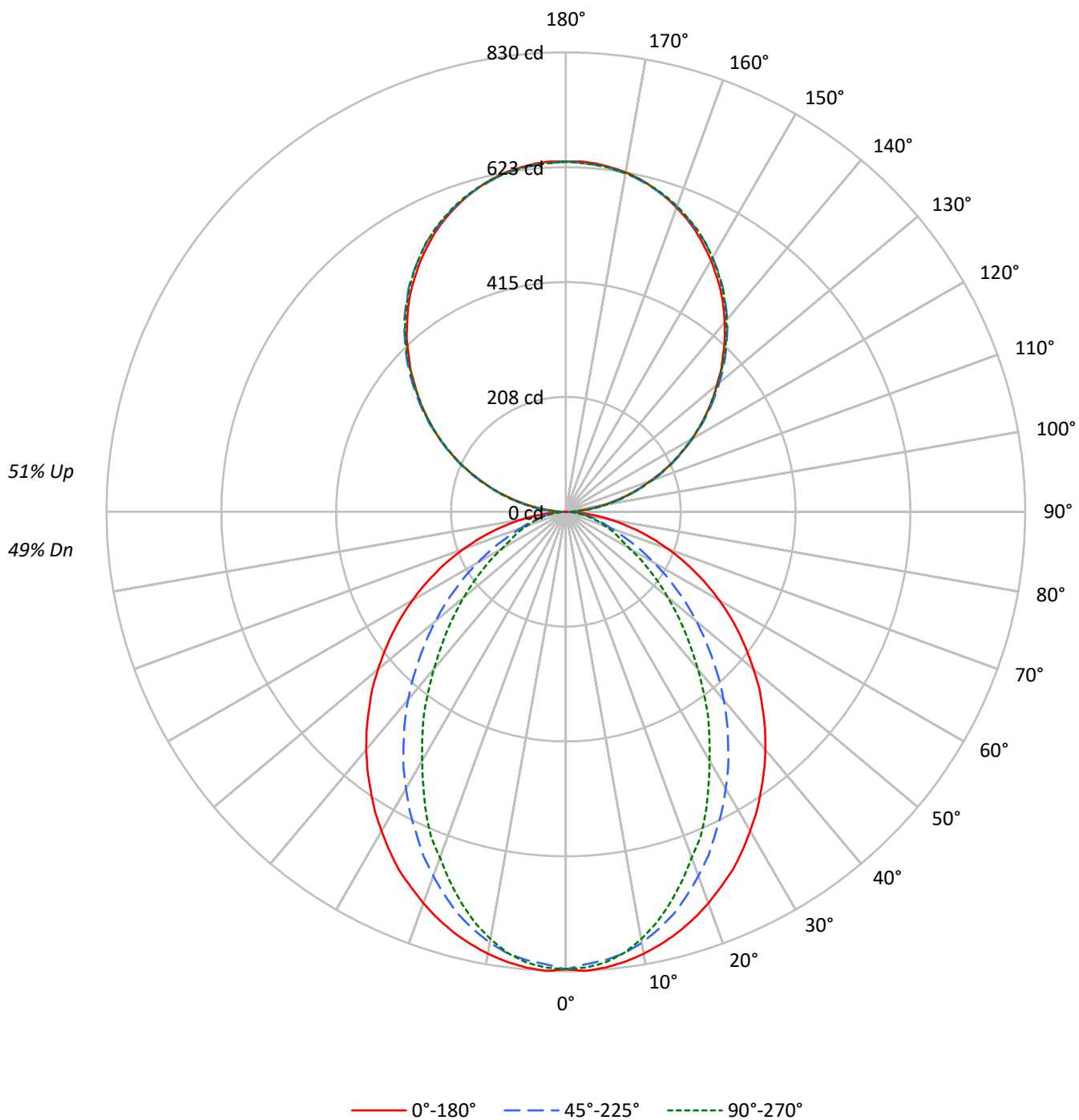
Lumens per Lamp: N/A
Luminaire Lumens: 3470.0 lumens
Efficiency: N/A
Efficacy: 111.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.07' x L: 3.07' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 31
Input Voltage (V):
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

TEST NUMBER: P904904

CATALOG NUMBER: DFN2DIP-4P3F0-020D020US835-RLLFLL

Luminous Intensity Polar Plot



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CATALOG NUMBER: DFN2DIP-4P3F0-020D020US835-RLLFLL

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	107	107	107	107	99	99	99	99	83	83	83	68	68	68	55	55	55
1	98	94	90	87	90	87	84	81	73	71	69	61	59	58	50	49	48
2	90	83	77	72	82	76	71	67	65	61	58	54	51	49	44	42	41
3	82	73	66	60	75	68	61	57	58	53	49	48	45	42	40	37	35
4	75	65	57	51	69	60	54	48	51	46	42	43	40	36	36	33	31
5	69	58	50	44	64	54	47	42	46	41	37	39	35	32	32	29	27
6	64	52	44	39	59	49	42	37	42	36	32	35	31	28	30	26	24
7	59	47	40	34	55	44	37	32	38	33	29	32	28	25	27	24	22
8	55	43	36	30	51	40	33	29	35	29	26	30	26	23	25	22	20
9	51	39	32	27	47	37	30	26	32	27	23	27	23	20	23	20	18
10	48	36	29	24	44	34	28	23	30	24	21	25	21	19	22	18	16

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	942	942	942
5°	943	926	933
10°	933	908	902
15°	920	877	855
20°	902	835	797
25°	884	788	741
30°	860	740	670
35°	836	689	608
40°	812	635	537
45°	785	576	473
50°	756	517	410
55°	726	453	349
60°	691	387	287
65°	651	320	258
70°	602	256	233
75°	540	225	212
80°	452	187	182
85°	306	122	135

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 785 cd/sqm

TEST NUMBER: P904904

CATALOG NUMBER: DFN2DIP-4P3F0-020D020US835-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	77.5	2.2
10°-20°	212.7	6.1
20°-30°	298.6	8.6
30°-40°	325.5	9.4
40°-50°	299.1	8.6
50°-60°	234.9	6.8
60°-70°	152.9	4.4
70°-80°	78.7	2.3
80°-90°	21.9	0.6
90°-100°	39.1	1.1
100°-110°	124.4	3.6
110°-120°	212.8	6.1
120°-130°	279.9	8.1
130°-140°	314.2	9.1
140°-150°	308.1	8.9
150°-160°	258.4	7.4
160°-170°	171.4	4.9
170°-180°	59.9	1.7
0°-30°	588.7	17.0
0°-40°	914.2	26.3
0°-60°	1448.3	41.7
0°-90°	1701.8	49.0
90°-120°	376.3	10.8
90°-150°	1278.5	36.8
90°-180°	1768.0	51.0
0°-180°	3470.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	827	827	827	827	827	
5°	827	823	813	820	818	78
15°	786	778	752	738	731	222
25°	714	690	640	610	598	328
35°	615	577	511	464	447	385
45°	503	452	374	321	303	388
55°	382	324	243	198	184	342
65°	258	198	130	105	102	256
75°	138	85	60	55	54	146
85°	32	16	14	14	14	37
90°	1	7	19	18	18	3
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	

TEST NUMBER: P904904

CATALOG NUMBER: DFN2DIP-4P3F0-020D020US835-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	826.6	826.6	826.6	826.6	826.6
2.5°	830.3	826.6	818.3	825.9	824.4
5°	826.6	822.9	813.1	819.9	817.6
7.5°	819.9	815.4	804.9	807.9	804.1
10°	810.9	805.6	790.7	788.4	784.0
12.5°	799.7	792.9	772.7	768.3	760.0
15°	786.2	777.9	752.5	738.3	730.9
17.5°	770.5	758.5	727.1	710.6	698.7
20°	752.5	737.5	700.2	681.5	665.0
22.5°	733.1	715.9	672.5	647.1	635.9
25°	713.7	689.7	640.3	609.7	598.4
27.5°	690.5	665.0	610.4	575.2	558.0
30°	665.8	637.3	577.5	539.4	519.1
32.5°	641.8	607.4	546.1	501.2	482.5
35°	614.9	576.8	511.0	463.8	447.3
37.5°	588.7	547.5	478.0	426.4	407.7
40°	561.0	516.2	443.6	390.5	371.0
42.5°	532.6	484.8	409.2	353.8	335.2
45°	502.7	452.5	374.1	320.9	302.9
47.5°	474.3	421.2	340.4	287.2	270.8
50°	442.9	389.8	307.5	255.8	240.2
52.5°	412.1	356.0	276.0	226.7	212.5
55°	382.2	323.9	243.1	198.3	184.0
57.5°	351.6	291.7	214.0	172.1	160.1
60°	320.2	260.3	183.3	145.2	133.2
62.5°	289.5	229.7	157.1	121.2	115.2
65°	258.1	197.5	130.2	104.8	102.5
67.5°	228.2	167.5	104.8	92.0	89.8
70°	196.7	138.4	86.7	79.3	76.3
72.5°	166.8	111.4	72.5	66.6	65.1
75°	137.6	85.2	59.8	54.6	53.9
77.5°	108.5	60.6	47.1	44.1	42.6
80°	81.5	43.4	35.9	32.9	32.9
82.5°	56.8	29.2	24.7	23.2	23.2
85°	32.1	16.4	14.2	14.2	14.2
87.5°	12.0	6.0	6.0	5.2	5.2
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

TEST NUMBER: P904904

CATALOG NUMBER: DFN2DIP-4P3F0-020D020US835-RLLFLL

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	6.81	7.64	7.79	8.62	9.90	2.78	3.60	3.75	4.58	5.87
	3H	8.49	9.22	9.47	10.21	11.52	3.96	4.69	4.94	5.68	6.99
	4H	9.09	9.79	10.09	10.78	12.10	4.40	5.10	5.40	6.09	7.41
	6H	9.51	10.15	10.52	11.15	12.48	4.72	5.36	5.72	6.36	7.69
	8H	9.63	10.24	10.65	11.26	12.58	4.80	5.41	5.82	6.43	7.76
	12H	9.69	10.27	10.71	11.28	12.63	4.85	5.42	5.86	6.43	7.78
4H	2H	6.83	7.52	7.83	8.52	9.84	3.37	4.06	4.37	5.06	6.38
	3H	8.65	9.23	9.66	10.25	11.58	4.71	5.29	5.72	6.31	7.64
	4H	9.34	9.87	10.36	10.88	12.24	5.25	5.78	6.27	6.80	8.15
	6H	9.85	10.30	10.88	11.34	12.70	5.66	6.12	6.69	7.16	8.51
	8H	10.02	10.45	11.05	11.48	12.84	5.79	6.21	6.82	7.24	8.61
	12H	10.11	10.50	11.16	11.54	12.91	5.85	6.23	6.90	7.28	8.65
8H	4H	9.31	9.73	10.34	10.76	12.13	5.53	5.95	6.56	6.98	8.35
	6H	9.87	10.22	10.92	11.29	12.65	6.04	6.39	7.09	7.46	8.82
	8H	10.08	10.39	11.14	11.45	12.83	6.22	6.53	7.29	7.59	8.97
	12H	10.21	10.48	11.28	11.54	12.96	6.34	6.61	7.40	7.66	9.09
12H	4H	9.26	9.64	10.31	10.69	12.06	5.53	5.91	6.58	6.96	8.33
	6H	9.84	10.15	10.90	11.21	12.59	6.09	6.39	7.15	7.45	8.83
	8H	10.06	10.33	11.12	11.38	12.81	6.29	6.56	7.36	7.61	9.04

END OF REPORT