

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: P905577

Luminaire Tested: DFN2DIP-PN2F0-020D020US835-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905577
REPORT IS A COMBINATION OF REPORTS P900981 AND P897905
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-PN2F0-020D020US835-FLLONL
Description: 2 foot, Pentagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

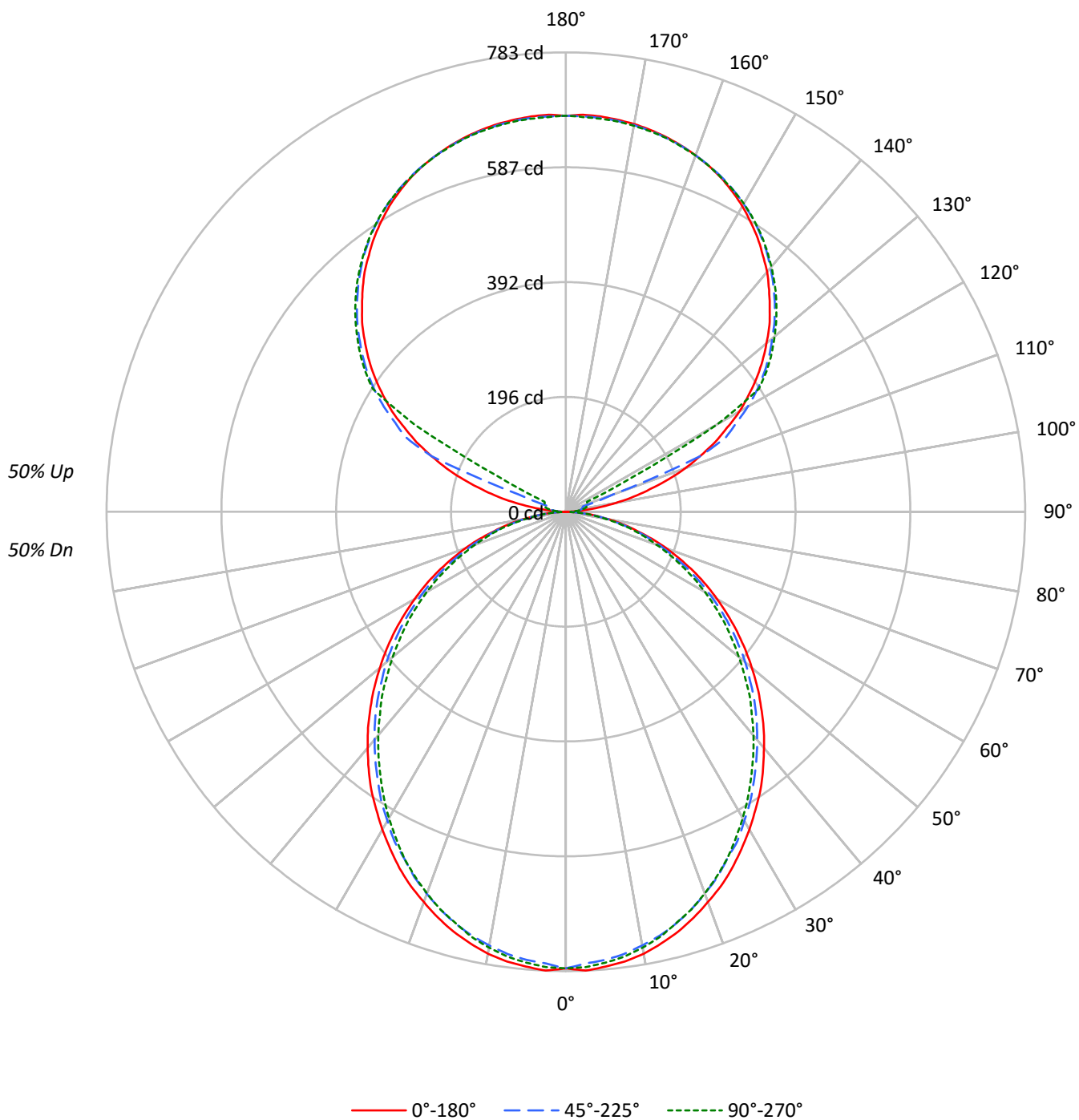
Lumens per Lamp: N/A
Luminaire Lumens: 3960.0 lumens
Efficiency: N/A
Efficacy: 122.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.17' x L: 2.29' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 32.3
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.099
Total Harmonic Distortion (THDi): 0.979
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P905577

CATALOG NUMBER: DFN2DIP-PN2F0-020D020US835-FLLONL

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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56
1	98	93	90	86	90	86	83	80	73	71	68	61	59	58	50	48	47
2	89	82	75	70	82	76	70	66	64	60	57	53	51	48	44	42	40
3	81	72	64	59	75	66	60	55	56	52	48	47	44	41	39	36	34
4	74	64	56	50	68	59	52	47	50	45	41	42	38	35	35	32	29
5	68	57	48	42	63	53	45	40	45	39	35	38	34	30	31	28	26
6	63	51	43	37	58	47	40	35	40	35	31	34	30	27	28	25	23
7	58	46	38	32	53	43	36	30	37	31	27	31	27	23	26	23	20
8	54	42	34	29	50	39	32	27	33	28	24	28	24	21	24	20	18
9	50	38	30	25	46	35	29	24	31	25	21	26	22	19	22	19	16
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1685	1685	1685
5°	1685	1658	1671
10°	1669	1633	1646
15°	1642	1602	1608
20°	1606	1561	1569
25°	1570	1513	1525
30°	1526	1468	1469
35°	1484	1415	1411
40°	1433	1362	1355
45°	1381	1308	1297
50°	1325	1252	1231
55°	1266	1187	1169
60°	1199	1110	1099
65°	1125	1030	1016
70°	1032	932	926
75°	904	815	839
80°	749	666	681
85°	507	421	427

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1381 cd/sqm

TEST NUMBER: P905577

CATALOG NUMBER: DFN2DIP-PN2F0-020D020US835-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.2	1.8
10°-20°	206.1	5.2
20°-30°	302.9	7.6
30°-40°	351.8	8.9
40°-50°	351.3	8.9
50°-60°	306.3	7.7
60°-70°	226.5	5.7
70°-80°	128.1	3.2
80°-90°	35.0	0.9
90°-100°	22.3	0.6
100°-110°	83.0	2.1
110°-120°	220.1	5.6
120°-130°	365.0	9.2
130°-140°	387.7	9.8
140°-150°	360.3	9.1
150°-160°	289.7	7.3
160°-170°	186.7	4.7
170°-180°	64.2	1.6
0°-30°	582.2	14.7
0°-40°	934.0	23.6
0°-60°	1591.6	40.2
0°-90°	1981.2	50.0
90°-120°	325.3	8.2
90°-150°	1438.2	36.3
90°-180°	1979.0	50.0
0°-180°	3960.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	778	778	778	778	778	
5°	778	775	767	773	772	74
15°	741	736	727	730	726	209
25°	670	664	652	653	652	309
35°	578	571	559	554	551	361
45°	471	466	454	446	443	363
55°	356	352	343	334	330	318
65°	240	236	228	222	218	238
75°	126	124	120	116	118	134
85°	31	30	29	27	26	34
90°	0	6	10	12	13	4
95°	32	16	19	22	21	38
105°	148	163	30	35	37	159
115°	281	289	301	75	40	276
125°	397	403	413	416	418	354
135°	491	499	504	508	508	380
145°	570	570	578	581	579	356
155°	628	623	629	632	628	289
165°	661	658	660	663	660	187
175°	676	673	674	677	672	64
180°	675	675	675	675	675	

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CATALOG NUMBER: DFN2DIP-PN2F0-020D020US835-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	778.2	778.2	778.2	778.2	778.2
2.5°	782.7	779.0	770.7	778.2	776.8
5°	778.2	775.3	767.0	773.0	771.5
7.5°	773.0	768.5	760.3	766.3	764.8
10°	764.8	759.6	750.6	756.5	754.3
12.5°	753.5	749.1	740.1	743.8	742.3
15°	740.8	736.4	726.6	729.6	725.9
17.5°	725.1	720.7	710.9	714.6	710.9
20°	707.9	703.4	692.9	695.2	692.2
22.5°	690.7	684.0	674.2	674.2	672.7
25°	670.5	664.5	651.8	653.2	651.8
27.5°	648.0	642.8	633.1	630.9	627.1
30°	625.6	619.6	608.4	606.2	603.1
32.5°	601.6	597.2	585.2	580.7	577.7
35°	578.5	571.0	559.0	554.5	550.7
37.5°	552.3	545.5	533.5	528.3	524.5
40°	525.3	519.3	507.3	500.7	497.6
42.5°	499.1	493.1	481.2	473.7	469.2
45°	470.7	465.5	454.2	446.0	443.0
47.5°	443.0	437.8	425.8	417.5	413.1
50°	413.8	410.1	399.6	389.1	385.4
52.5°	385.4	380.1	370.4	362.2	357.0
55°	356.2	351.7	342.7	333.8	330.0
57.5°	327.0	323.3	313.5	304.6	301.5
60°	297.8	294.9	284.4	276.1	273.9
62.5°	269.4	264.1	256.7	249.2	246.2
65°	240.2	235.7	228.3	221.5	217.8
67.5°	210.3	206.5	199.8	194.6	191.6
70°	182.6	179.6	172.8	167.6	164.7
72.5°	154.2	151.2	147.4	142.2	140.0
75°	125.7	124.3	120.4	116.0	117.5
77.5°	100.3	97.3	95.7	93.5	91.3
80°	74.9	74.1	72.6	70.3	68.8
82.5°	50.9	50.9	50.2	47.2	47.2
85°	30.6	29.9	29.2	26.9	26.2
87.5°	13.5	12.0	10.5	8.3	7.5
90°	0.5	5.9	9.7	12.2	13.2
92.5°	12.2	10.3	11.7	12.7	13.2
95°	31.7	15.6	19.0	21.5	21.0
97.5°	57.1	17.1	24.9	26.4	26.9
100°	86.5	19.5	27.8	31.7	32.7
102.5°	118.7	117.7	28.8	34.2	35.7
105°	148.5	163.1	29.8	35.1	37.1
107.5°	183.2	195.3	30.8	36.1	38.1
110°	216.4	226.6	85.5	36.7	38.6



TEST NUMBER: P905577

CATALOG NUMBER: DFN2DIP-PN2F0-020D020US835-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	247.6	256.4	248.1	37.6	39.1
115°	280.8	289.1	301.4	75.2	40.1
117.5°	309.6	319.4	327.7	257.9	129.9
120°	341.9	349.2	358.0	363.9	297.9
122.5°	369.2	377.0	386.8	389.7	390.3
125°	397.1	403.4	412.7	416.1	417.6
127.5°	422.5	429.3	436.7	441.5	442.0
130°	446.4	454.2	459.6	465.0	464.5
132.5°	470.8	477.2	482.5	486.9	486.5
135°	491.4	499.2	503.5	508.5	507.5
137.5°	512.8	518.7	523.6	528.5	527.0
140°	533.8	537.8	543.1	547.5	545.1
142.5°	551.4	554.9	561.2	565.1	562.6
145°	570.0	569.5	577.8	581.2	578.8
147.5°	586.1	584.6	592.9	595.3	593.4
150°	601.7	598.3	606.1	609.0	606.6
152.5°	614.9	611.0	618.3	621.3	617.8
155°	627.6	623.2	629.1	632.0	628.1
157.5°	637.9	634.0	638.4	641.8	637.9
160°	646.7	643.7	646.7	649.6	646.2
162.5°	654.4	651.5	654.0	657.4	653.0
165°	661.3	658.4	659.8	663.3	659.8
167.5°	666.7	663.7	665.2	668.7	664.2
170°	671.1	668.1	669.1	672.5	668.1
172.5°	674.0	671.1	672.1	675.5	671.1
175°	676.4	673.0	674.0	677.4	672.5
177.5°	677.4	674.0	674.5	677.9	673.5
180°	675.0	675.0	675.0	675.0	675.0

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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	8.97	9.83	9.93	10.81	12.08	8.54	9.40	9.49	10.37	11.64
	3H	10.61	11.39	11.58	12.37	13.66	10.13	10.91	11.10	11.89	13.18
	4H	11.19	11.92	12.17	12.90	14.20	10.70	11.44	11.69	12.42	13.72
	6H	11.57	12.25	12.56	13.24	14.55	11.08	11.76	12.08	12.75	14.06
	8H	11.67	12.31	12.67	13.32	14.63	11.18	11.82	12.18	12.83	14.14
	12H	11.71	12.32	12.71	13.32	14.66	11.22	11.83	12.22	12.83	14.16
4H	2H	9.42	10.16	10.41	11.14	12.44	9.07	9.81	10.06	10.79	12.09
	3H	11.27	11.88	12.26	12.89	14.21	10.87	11.48	11.86	12.49	13.81
	4H	11.96	12.52	12.97	13.53	14.87	11.55	12.11	12.56	13.12	14.45
	6H	12.46	12.94	13.48	13.97	15.31	12.04	12.52	13.06	13.55	14.89
	8H	12.60	13.05	13.62	14.07	15.42	12.18	12.63	13.19	13.65	15.00
	12H	12.66	13.07	13.70	14.11	15.46	12.23	12.64	13.27	13.67	15.03
8H	4H	12.15	12.60	13.17	13.62	14.97	11.78	12.23	12.80	13.25	14.60
	6H	12.76	13.13	13.80	14.19	15.54	12.38	12.75	13.42	13.82	15.17
	8H	12.96	13.29	14.01	14.34	15.71	12.58	12.91	13.63	13.96	15.33
	12H	13.08	13.37	14.14	14.42	15.83	12.69	12.97	13.74	14.02	15.43
12H	4H	12.13	12.54	13.17	13.58	14.93	11.77	12.18	12.81	13.22	14.57
	6H	12.78	13.11	13.83	14.16	15.53	12.42	12.75	13.47	13.80	15.16
	8H	13.01	13.30	14.06	14.34	15.75	12.64	12.93	13.69	13.97	15.38