

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: P905147

Luminaire Tested: DFN2DIP-HX2F0-020D020US835-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905147
REPORT IS A COMBINATION OF REPORTS P900671 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-020D020US835-FLLONL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

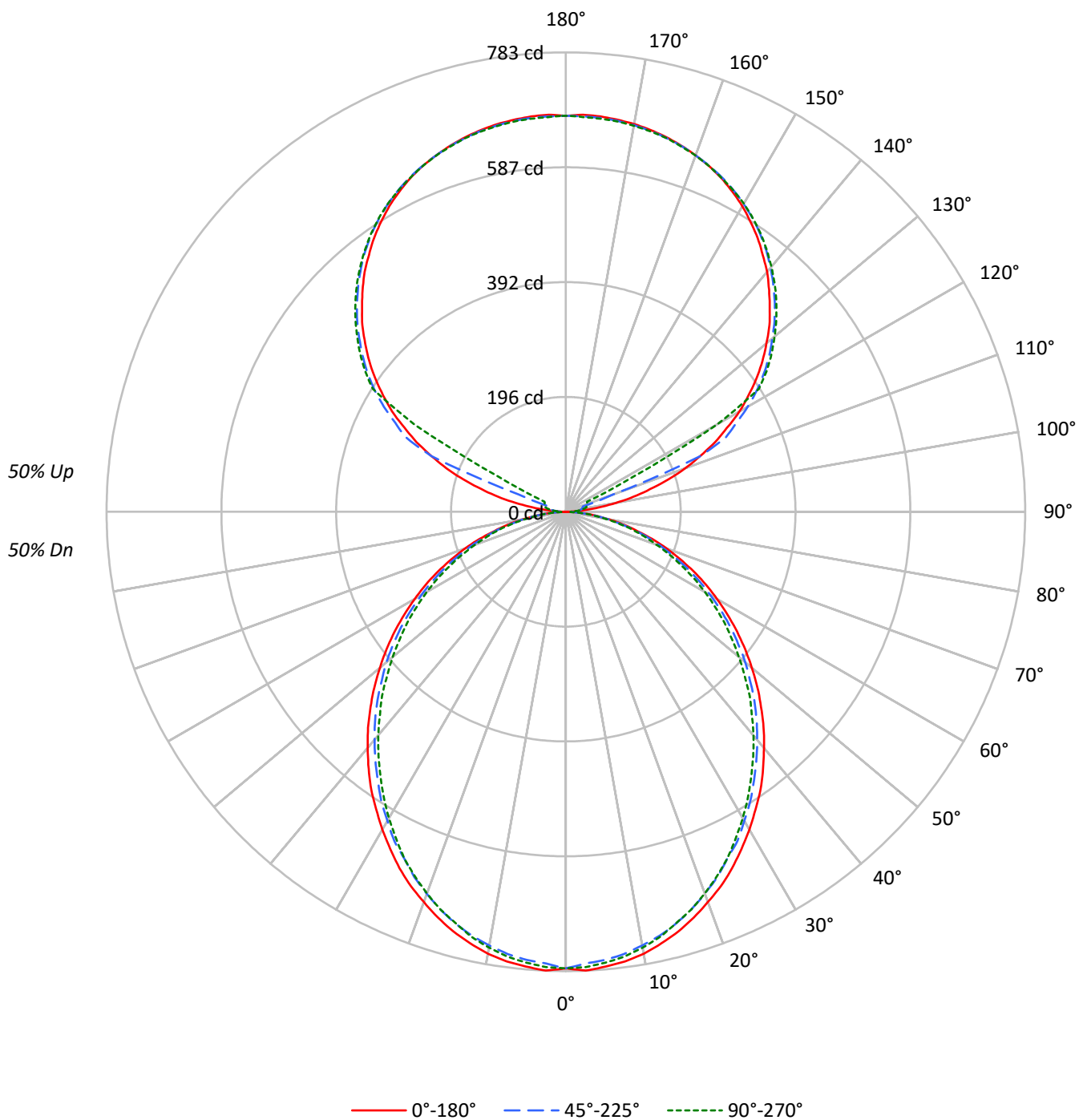
Lumens per Lamp: N/A
Luminaire Lumens: 3960.0 lumens
Efficiency: N/A
Efficacy: 129.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 30.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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	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°	1834	1834	1834
5°	1834	1804	1817
10°	1816	1775	1789
15°	1786	1741	1747
20°	1747	1696	1704
25°	1708	1644	1656
30°	1660	1594	1595
35°	1615	1536	1530
40°	1559	1478	1469
45°	1503	1419	1405
50°	1442	1357	1333
55°	1378	1286	1265
60°	1305	1202	1187
65°	1225	1114	1096
70°	1124	1007	997
75°	984	879	901
80°	815	716	726
85°	552	449	450

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1503 cd/sqm

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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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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



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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	9.24	10.11	10.20	11.08	12.35	8.82	9.68	9.78	10.66	11.93
	3H	10.88	11.65	11.85	12.63	13.93	10.42	11.19	11.39	12.17	13.47
	4H	11.45	12.18	12.43	13.17	14.47	10.99	11.72	11.97	12.71	14.01
	6H	11.83	12.51	12.82	13.50	14.81	11.37	12.05	12.36	13.04	14.35
	8H	11.93	12.57	12.93	13.58	14.89	11.47	12.11	12.47	13.12	14.43
	12H	11.97	12.58	12.97	13.58	14.91	11.50	12.11	12.51	13.12	14.45
4H	2H	9.70	10.43	10.68	11.41	12.71	9.36	10.09	10.35	11.08	12.38
	3H	11.53	12.14	12.53	13.16	14.47	11.15	11.76	12.15	12.78	14.09
	4H	12.23	12.79	13.23	13.79	15.13	11.83	12.39	12.84	13.40	14.74
	6H	12.72	13.20	13.74	14.23	15.57	12.32	12.80	13.34	13.84	15.17
	8H	12.86	13.31	13.88	14.33	15.68	12.46	12.91	13.48	13.93	15.28
	12H	12.92	13.32	13.96	14.36	15.72	12.51	12.92	13.55	13.96	15.32
8H	4H	12.41	12.86	13.43	13.89	15.24	12.06	12.51	13.08	13.54	14.89
	6H	13.02	13.39	14.06	14.45	15.80	12.66	13.04	13.71	14.10	15.45
	8H	13.22	13.55	14.27	14.60	15.97	12.86	13.19	13.91	14.24	15.61
	12H	13.34	13.62	14.39	14.67	16.08	12.97	13.25	14.02	14.30	15.71
12H	4H	12.40	12.80	13.43	13.84	15.20	12.05	12.46	13.09	13.50	14.85
	6H	13.04	13.37	14.09	14.42	15.79	12.70	13.03	13.75	14.08	15.44
	8H	13.26	13.55	14.32	14.60	16.01	12.92	13.21	13.97	14.25	15.66