

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: P907875

Luminaire Tested: DFN2DIP-HX2F0-020D020US840-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907875
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-HX2F0-020D020US840-FLLONL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

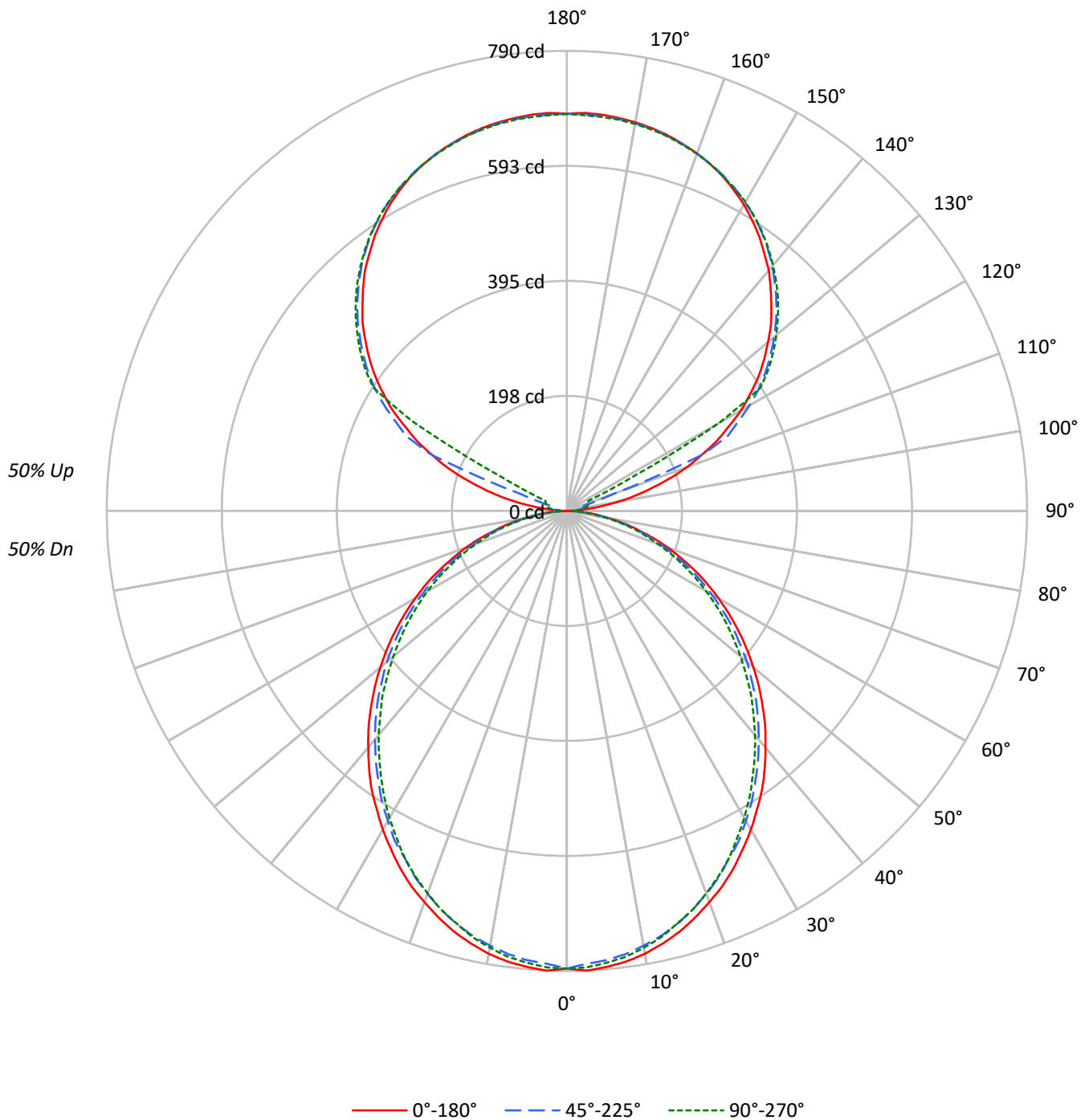
Lumens per Lamp: N/A
Luminaire Lumens: 3999.1 lumens
Efficiency: N/A
Efficacy: 131.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

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

TEST NUMBER: P907875

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US840-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°	1852	1852	1852
5°	1852	1821	1835
10°	1834	1793	1806
15°	1804	1759	1764
20°	1765	1713	1721
25°	1725	1660	1672
30°	1677	1610	1610
35°	1631	1552	1545
40°	1574	1493	1483
45°	1518	1433	1419
50°	1456	1371	1346
55°	1391	1299	1277
60°	1318	1214	1199
65°	1237	1126	1107
70°	1135	1017	1007
75°	994	887	910
80°	823	723	734
85°	558	454	455

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1518 cd/sqm

TEST NUMBER: P907875

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US840-FLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	74.0	1.8
10°-20°	208.1	5.2
20°-30°	305.8	7.6
30°-40°	355.2	8.9
40°-50°	354.8	8.9
50°-60°	309.4	7.7
60°-70°	228.7	5.7
70°-80°	129.4	3.2
80°-90°	35.4	0.9
90°-100°	22.5	0.6
100°-110°	83.8	2.1
110°-120°	222.2	5.6
120°-130°	368.6	9.2
130°-140°	391.5	9.8
140°-150°	363.9	9.1
150°-160°	292.5	7.3
160°-170°	188.5	4.7
170°-180°	64.9	1.6
0°-30°	587.9	14.7
0°-40°	943.2	23.6
0°-60°	1607.3	40.2
0°-90°	2000.7	50.0
90°-120°	328.5	8.2
90°-150°	1452.4	36.3
90°-180°	1998.0	50.0
0°-180°	3999.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	786	786	786	786	786	
5°	786	783	775	781	779	75
15°	748	744	734	737	733	211
25°	677	671	658	660	658	312
35°	584	577	564	560	556	365
45°	475	470	459	450	447	367
55°	360	355	346	337	333	322
65°	243	238	231	224	220	240
75°	127	126	122	117	119	135
85°	31	30	30	27	26	35
90°	0	6	10	12	13	4
95°	32	16	19	22	21	38
105°	150	165	30	35	38	160
115°	284	292	304	76	40	279
125°	401	407	417	420	422	358
135°	496	504	508	514	512	383
145°	576	575	584	587	584	360
155°	634	629	635	638	634	292
165°	668	665	666	670	666	189
175°	683	680	681	684	679	65
180°	682	682	682	682	682	

TEST NUMBER: P907875

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US840-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	785.9	785.9	785.9	785.9	785.9
2.5°	790.4	786.7	778.3	785.9	784.5
5°	785.9	782.9	774.6	780.6	779.1
7.5°	780.6	776.1	767.8	773.9	772.3
10°	772.3	767.1	758.0	764.0	761.7
12.5°	760.9	756.5	747.4	751.1	749.6
15°	748.1	743.7	733.8	736.8	733.1
17.5°	732.3	727.8	717.9	721.6	717.9
20°	714.9	710.3	699.7	702.1	699.0
22.5°	697.5	690.7	680.9	680.9	679.3
25°	677.1	671.1	658.2	659.6	658.2
27.5°	654.4	649.1	639.3	637.1	633.3
30°	631.8	625.7	614.4	612.2	609.0
32.5°	607.5	603.1	591.0	586.4	583.4
35°	584.2	576.6	564.5	560.0	556.1
37.5°	557.7	550.9	538.8	533.5	529.7
40°	530.5	524.4	512.3	505.6	502.5
42.5°	504.0	498.0	485.9	478.4	473.8
45°	475.3	470.1	458.7	450.4	447.4
47.5°	447.4	442.1	430.0	421.6	417.2
50°	417.9	414.1	403.5	392.9	389.2
52.5°	389.2	383.8	374.1	365.8	360.5
55°	359.7	355.2	346.1	337.1	333.3
57.5°	330.2	326.5	316.6	307.6	304.5
60°	300.7	297.8	287.2	278.8	276.6
62.5°	272.1	266.7	259.2	251.7	248.6
65°	242.6	238.0	230.6	223.7	219.9
67.5°	212.4	208.5	201.8	196.5	193.5
70°	184.4	181.4	174.5	169.3	166.3
72.5°	155.7	152.7	148.9	143.6	141.4
75°	126.9	125.5	121.6	117.1	118.7
77.5°	101.3	98.3	96.6	94.4	92.2
80°	75.6	74.8	73.3	71.0	69.5
82.5°	51.4	51.4	50.7	47.7	47.7
85°	30.9	30.2	29.5	27.2	26.5
87.5°	13.6	12.1	10.6	8.4	7.6
90°	0.5	6.0	9.8	12.3	13.3
92.5°	12.3	10.4	11.8	12.8	13.3
95°	32.0	15.8	19.2	21.7	21.2
97.5°	57.7	17.3	25.1	26.7	27.2
100°	87.4	19.7	28.1	32.0	33.0
102.5°	119.9	118.9	29.1	34.5	36.1
105°	150.0	164.7	30.1	35.4	37.5
107.5°	185.0	197.2	31.1	36.5	38.5
110°	218.5	228.8	86.3	37.1	39.0

TEST NUMBER: P907875

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US840-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	250.0	258.9	250.5	38.0	39.5
115°	283.6	292.0	304.4	75.9	40.5
117.5°	312.7	322.6	330.9	260.4	131.2
120°	345.3	352.6	361.5	367.5	300.8
122.5°	372.8	380.7	390.6	393.5	394.2
125°	401.0	407.4	416.8	420.2	421.7
127.5°	426.7	433.5	441.0	445.9	446.4
130°	450.8	458.7	464.1	469.6	469.1
132.5°	475.4	481.9	487.3	491.7	491.3
135°	496.2	504.1	508.5	513.5	512.5
137.5°	517.9	523.8	528.8	533.7	532.2
140°	539.1	543.1	548.5	552.9	550.5
142.5°	556.8	560.4	566.7	570.7	568.2
145°	575.6	575.1	583.5	586.9	584.5
147.5°	591.9	590.4	598.7	601.2	599.3
150°	607.6	604.2	612.1	615.0	612.6
152.5°	621.0	617.0	624.4	627.4	623.9
155°	633.8	629.3	635.3	638.2	634.3
157.5°	644.2	640.3	644.7	648.1	644.2
160°	653.1	650.1	653.1	656.0	652.6
162.5°	660.9	657.9	660.5	663.9	659.4
165°	667.8	664.9	666.3	669.8	666.3
167.5°	673.3	670.2	671.8	675.3	670.8
170°	677.7	674.7	675.7	679.1	674.7
172.5°	680.6	677.7	678.7	682.2	677.7
175°	683.1	679.6	680.6	684.1	679.1
177.5°	684.1	680.6	681.2	684.6	680.1
180°	681.7	681.7	681.7	681.7	681.7

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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	9.28	10.14	10.24	11.11	12.38	8.86	9.72	9.81	10.69	11.96
	3H	10.91	11.69	11.88	12.67	13.96	10.45	11.23	11.42	12.21	13.50
	4H	11.48	12.22	12.47	13.20	14.50	11.03	11.76	12.01	12.74	14.04
	6H	11.87	12.54	12.86	13.53	14.84	11.41	12.08	12.40	13.07	14.39
	8H	11.96	12.60	12.96	13.61	14.92	11.50	12.14	12.50	13.15	14.46
	12H	12.00	12.61	13.00	13.61	14.95	11.54	12.15	12.54	13.15	14.49
4H	2H	9.73	10.46	10.72	11.45	12.75	9.39	10.12	10.38	11.11	12.41
	3H	11.57	12.18	12.56	13.19	14.51	11.18	11.80	12.18	12.81	14.12
	4H	12.26	12.82	13.27	13.83	15.17	11.87	12.43	12.87	13.43	14.77
	6H	12.75	13.23	13.77	14.27	15.60	12.36	12.84	13.37	13.87	15.21
	8H	12.89	13.34	13.91	14.36	15.72	12.49	12.94	13.51	13.97	15.32
	12H	12.95	13.36	13.99	14.40	15.75	12.55	12.95	13.59	13.99	15.35
8H	4H	12.45	12.90	13.47	13.92	15.27	12.10	12.55	13.11	13.57	14.92
	6H	13.05	13.42	14.09	14.49	15.84	12.70	13.07	13.74	14.13	15.48
	8H	13.25	13.58	14.30	14.63	16.00	12.90	13.23	13.95	14.28	15.64
	12H	13.37	13.66	14.42	14.70	16.11	13.00	13.29	14.05	14.33	15.74
12H	4H	12.43	12.84	13.47	13.88	15.23	12.09	12.49	13.12	13.53	14.89
	6H	13.07	13.40	14.12	14.45	15.82	12.73	13.06	13.78	14.11	15.48
	8H	13.30	13.59	14.35	14.63	16.04	12.95	13.24	14.01	14.29	15.70