

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: P910603

Luminaire Tested: DFN2DIP-HX2F0-020D020US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P910603
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-HX2F0-020D020US850-FLLONL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

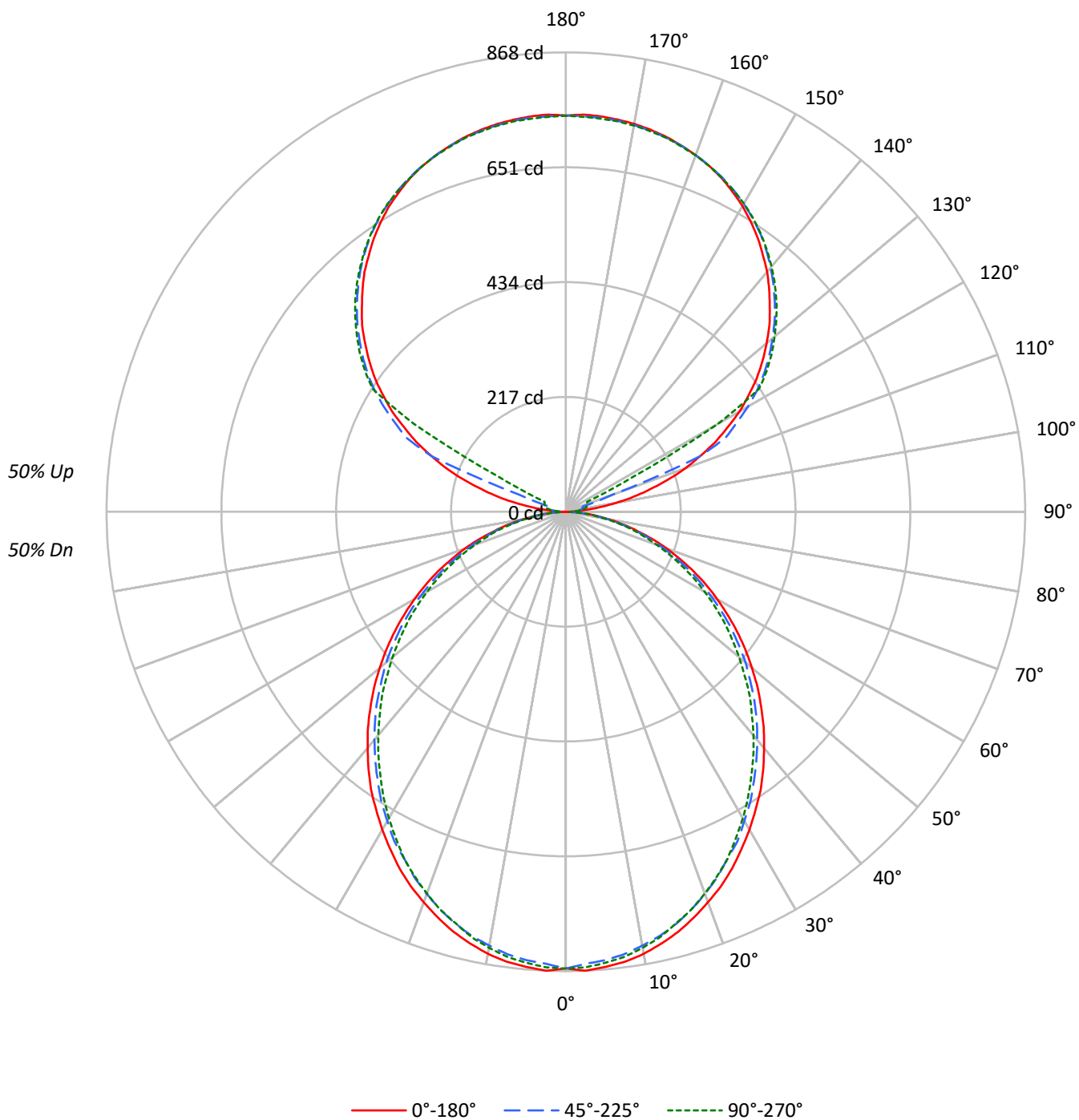
Lumens per Lamp: N/A
Luminaire Lumens: 4391.6 lumens
Efficiency: N/A
Efficacy: 144.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: General Diffuse

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: P910603

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US850-FLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P910603

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US850-FLLONL

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°	2033	2033	2033
5°	2033	2000	2015
10°	2014	1968	1984
15°	1981	1931	1938
20°	1938	1881	1890
25°	1895	1823	1836
30°	1841	1768	1768
35°	1791	1704	1697
40°	1729	1639	1628
45°	1667	1574	1559
50°	1599	1506	1478
55°	1528	1426	1403
60°	1447	1333	1317
65°	1358	1236	1215
70°	1246	1116	1106
75°	1092	974	999
80°	904	794	806
85°	612	498	500

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1667 cd/sqm

TEST NUMBER: P910603

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US850-FLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	81.2	1.8
10°-20°	228.6	5.2
20°-30°	335.9	7.6
30°-40°	390.1	8.9
40°-50°	389.6	8.9
50°-60°	339.7	7.7
60°-70°	251.1	5.7
70°-80°	142.1	3.2
80°-90°	38.8	0.9
90°-100°	24.7	0.6
100°-110°	92.0	2.1
110°-120°	244.0	5.6
120°-130°	404.8	9.2
130°-140°	429.9	9.8
140°-150°	399.6	9.1
150°-160°	321.3	7.3
160°-170°	207.0	4.7
170°-180°	71.2	1.6
0°-30°	645.7	14.7
0°-40°	1035.8	23.6
0°-60°	1765.1	40.2
0°-90°	2197.1	50.0
90°-120°	360.7	8.2
90°-150°	1595.0	36.3
90°-180°	2194.0	50.0
0°-180°	4391.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	863	863	863	863	863	
5°	863	860	851	857	856	82
15°	822	817	806	809	805	231
25°	744	737	723	724	723	342
35°	642	633	620	615	611	401
45°	522	516	504	495	491	403
55°	395	390	380	370	366	353
65°	266	261	253	246	242	263
75°	139	138	134	129	130	149
85°	34	33	32	30	29	38
90°	1	6	11	14	15	4
95°	35	17	21	24	23	42
105°	165	181	33	39	41	176
115°	311	321	334	83	44	307
125°	440	447	458	462	463	393
135°	545	554	558	564	563	421
145°	632	632	641	645	642	395
155°	696	691	698	701	697	321
165°	733	730	732	736	732	207
175°	750	746	748	751	746	71
180°	749	749	749	749	749	



TEST NUMBER: P910603

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US850-FLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	863.0	863.0	863.0	863.0	863.0
2.5°	868.0	863.9	854.7	863.0	861.5
5°	863.0	859.8	850.6	857.3	855.6
7.5°	857.3	852.3	843.2	849.8	848.2
10°	848.2	842.4	832.4	839.0	836.5
12.5°	835.6	830.8	820.8	824.9	823.2
15°	821.5	816.7	805.8	809.1	805.0
17.5°	804.1	799.3	788.4	792.5	788.4
20°	785.1	780.1	768.4	771.0	767.6
22.5°	766.0	758.6	747.7	747.7	746.0
25°	743.6	736.9	722.8	724.4	722.8
27.5°	718.6	712.9	702.1	699.7	695.5
30°	693.8	687.1	674.7	672.3	668.8
32.5°	667.2	662.3	649.0	644.0	640.7
35°	641.6	633.2	619.9	614.9	610.7
37.5°	612.5	605.0	591.7	585.9	581.7
40°	582.6	575.9	562.6	555.3	551.8
42.5°	553.5	546.8	533.7	525.3	520.3
45°	522.0	516.2	503.7	494.6	491.3
47.5°	491.3	485.5	472.2	463.0	458.1
50°	458.9	454.8	443.2	431.5	427.4
52.5°	427.4	421.5	410.8	401.7	395.9
55°	395.0	390.0	380.1	370.2	366.0
57.5°	362.6	358.5	347.7	337.8	334.4
60°	330.3	327.0	315.4	306.2	303.8
62.5°	298.8	292.9	284.7	276.4	273.0
65°	266.4	261.4	253.2	245.6	241.5
67.5°	233.2	229.0	221.6	215.8	212.5
70°	202.5	199.2	191.6	185.9	182.7
72.5°	171.0	167.7	163.5	157.7	155.3
75°	139.4	137.8	133.5	128.6	130.3
77.5°	111.2	107.9	106.1	103.7	101.3
80°	83.1	82.2	80.5	78.0	76.3
82.5°	56.4	56.4	55.7	52.3	52.3
85°	33.9	33.2	32.4	29.8	29.1
87.5°	15.0	13.3	11.6	9.2	8.3
90°	0.6	6.5	10.8	13.5	14.6
92.5°	13.5	11.4	13.0	14.1	14.6
95°	35.2	17.3	21.1	23.8	23.3
97.5°	63.3	19.0	27.6	29.3	29.8
100°	95.9	21.6	30.8	35.2	36.3
102.5°	131.6	130.5	31.9	37.9	39.6
105°	164.7	180.9	33.0	38.9	41.1
107.5°	203.2	216.6	34.2	40.0	42.3
110°	240.0	251.3	94.8	40.7	42.8

TEST NUMBER: P910603

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US850-FLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	274.6	284.3	275.1	41.7	43.4
115°	311.4	320.6	334.3	83.4	44.5
117.5°	343.3	354.2	363.4	286.0	144.1
120°	379.2	387.3	397.0	403.6	330.4
122.5°	409.4	418.1	429.0	432.2	432.8
125°	440.4	447.4	457.7	461.5	463.1
127.5°	468.6	476.1	484.3	489.6	490.2
130°	495.1	503.7	509.7	515.7	515.1
132.5°	522.1	529.2	535.1	540.0	539.5
135°	545.0	553.6	558.4	563.9	562.8
137.5°	568.7	575.2	580.7	586.1	584.4
140°	592.0	596.4	602.3	607.2	604.5
142.5°	611.5	615.4	622.4	626.7	623.9
145°	632.1	631.6	640.8	644.6	641.9
147.5°	650.0	648.3	657.5	660.2	658.1
150°	667.3	663.5	672.2	675.4	672.7
152.5°	681.9	677.6	685.7	689.0	685.1
155°	696.0	691.1	697.7	700.9	696.6
157.5°	707.4	703.1	708.0	711.8	707.4
160°	717.2	713.9	717.2	720.4	716.6
162.5°	725.7	722.5	725.3	729.1	724.2
165°	733.4	730.2	731.7	735.6	731.7
167.5°	739.4	736.0	737.7	741.6	736.6
170°	744.2	740.9	742.0	745.8	740.9
172.5°	747.5	744.2	745.4	749.1	744.2
175°	750.1	746.4	747.5	751.2	745.8
177.5°	751.2	747.5	748.0	751.8	746.9
180°	748.6	748.6	748.6	748.6	748.6

TEST NUMBER: P910603

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US850-FLLONL

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	9.60	10.46	10.56	11.44	12.71	9.18	10.04	10.14	11.02	12.29
	3H	11.24	12.01	12.21	12.99	14.29	10.78	11.55	11.75	12.53	13.83
	4H	11.81	12.54	12.79	13.53	14.83	11.35	12.08	12.33	13.07	14.37
	6H	12.19	12.86	13.18	13.85	15.17	11.73	12.41	12.72	13.40	14.71
	8H	12.29	12.93	13.28	13.93	15.25	11.83	12.47	12.83	13.48	14.79
	12H	12.32	12.94	13.33	13.94	15.27	11.86	12.47	12.87	13.47	14.81
4H	2H	10.06	10.79	11.04	11.77	13.07	9.72	10.45	10.71	11.43	12.74
	3H	11.89	12.50	12.89	13.52	14.83	11.51	12.12	12.51	13.13	14.45
	4H	12.59	13.15	13.59	14.15	15.49	12.19	12.75	13.20	13.76	15.10
	6H	13.08	13.56	14.10	14.59	15.93	12.68	13.16	13.70	14.20	15.53
	8H	13.22	13.67	14.23	14.69	16.04	12.82	13.27	13.84	14.29	15.64
	12H	13.28	13.68	14.31	14.72	16.08	12.87	13.28	13.91	14.32	15.67
8H	4H	12.77	13.22	13.79	14.25	15.60	12.42	12.87	13.44	13.89	15.25
	6H	13.37	13.75	14.42	14.81	16.16	13.02	13.39	14.07	14.46	15.81
	8H	13.58	13.91	14.63	14.96	16.32	13.22	13.55	14.27	14.60	15.97
	12H	13.69	13.98	14.75	15.03	16.44	13.33	13.61	14.38	14.66	16.07
12H	4H	12.76	13.16	13.79	14.20	15.56	12.41	12.82	13.45	13.86	15.21
	6H	13.40	13.73	14.45	14.78	16.15	13.06	13.39	14.11	14.44	15.80
	8H	13.62	13.91	14.68	14.96	16.37	13.28	13.57	14.33	14.61	16.02