

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: P907877

Luminaire Tested: DFN2DIP-HX2F0-020D020US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907877
REPORT IS A COMBINATION OF REPORTS P900672 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-020D020US840-RLONL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

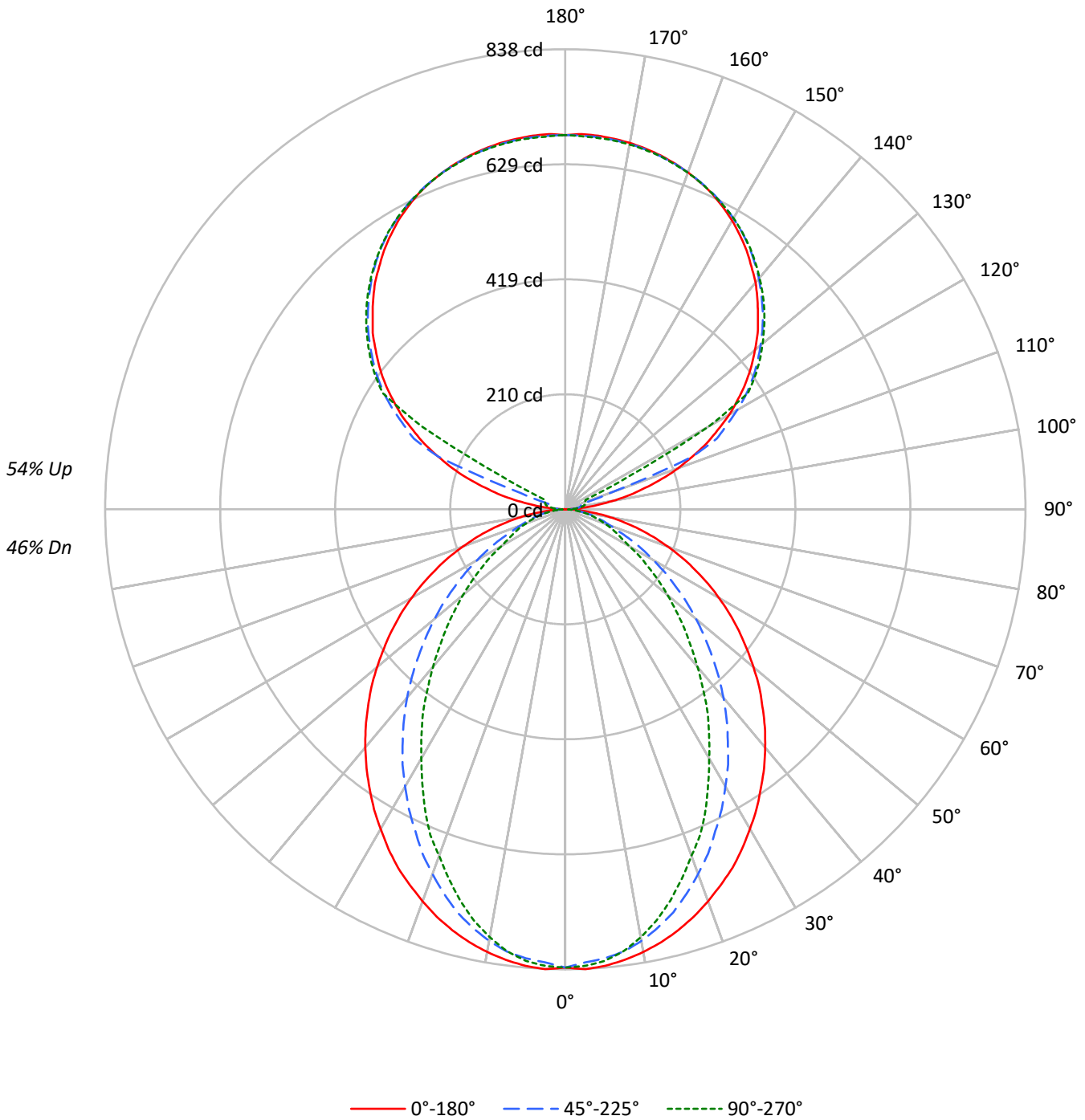
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3716.3 lumens
Efficiency: N/A
Efficacy: 121.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
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):
Input Current (A_{in}): 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: P907877
CATALOG NUMBER: DFN2DIP-HX2F0-020D020US840-RLLONL

Luminous Intensity Polar Plot





TEST NUMBER: P907877

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US840-RLLONL

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				
RC	80				70				50				30				10			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53	46			46
1	97	93	90	86	89	86	83	80	72	70	68	59	58	56	47	46	45	40			40
2	89	82	76	71	82	76	70	66	63	60	57	52	50	48	42	40	39	34			34
3	81	72	65	60	75	67	61	56	56	52	48	47	43	41	38	35	34	29			29
4	75	64	57	51	68	60	53	48	50	45	41	42	38	35	34	31	29	26			26
5	69	58	50	44	63	53	46	41	45	40	36	38	34	31	31	28	26	23			23
6	63	52	44	38	58	48	41	36	41	36	32	34	30	27	28	25	23	20			20
7	59	47	39	34	54	44	37	32	37	32	28	31	27	24	26	23	21	18			18
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	24	21	19	16			16
9	51	39	32	27	47	36	30	25	31	26	22	27	23	20	22	19	17	15			15
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	20	18	15	13			13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1967	1967	1967
5°	1967	1931	1944
10°	1944	1888	1877
15°	1914	1821	1776
20°	1876	1731	1654
25°	1836	1631	1535
30°	1784	1528	1386
35°	1733	1418	1255
40°	1681	1305	1106
45°	1621	1181	970
50°	1559	1055	839
55°	1493	921	712
60°	1417	782	583
65°	1329	642	521
70°	1222	510	467
75°	1088	441	417
80°	896	358	351
85°	585	220	246

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1621 cd/sqm



TEST NUMBER: P907877

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US840-RLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	78.2	2.1
10°-20°	214.8	5.8
20°-30°	301.5	8.1
30°-40°	328.7	8.8
40°-50°	302.1	8.1
50°-60°	237.3	6.4
60°-70°	154.4	4.2
70°-80°	79.5	2.1
80°-90°	21.5	0.6
90°-100°	22.5	0.6
100°-110°	83.8	2.3
110°-120°	222.2	6.0
120°-130°	368.6	9.9
130°-140°	391.5	10.5
140°-150°	363.9	9.8
150°-160°	292.5	7.9
160°-170°	188.5	5.1
170°-180°	64.9	1.7
0°-30°	594.5	16.0
0°-40°	923.2	24.8
0°-60°	1462.6	39.4
0°-90°	1718.0	46.2
90°-120°	328.5	8.8
90°-150°	1452.4	39.1
90°-180°	1998.0	53.8
0°-180°	3716.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	835	835	835	835	835	
5°	835	831	821	828	826	79
15°	794	786	760	746	738	224
25°	721	696	647	616	604	331
35°	621	582	516	468	452	389
45°	508	457	378	324	306	392
55°	386	327	246	200	186	345
65°	261	199	132	106	104	258
75°	139	86	60	55	54	147
85°	32	17	14	14	14	37
90°	0	6	10	12	13	3
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: P907877

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US840-RLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	834.8	834.8	834.8	834.8	834.8
2.5°	838.5	834.8	826.4	834.0	832.5
5°	834.8	831.0	821.1	828.0	825.7
7.5°	828.0	823.4	812.8	815.9	812.0
10°	818.9	813.5	798.5	796.2	791.7
12.5°	807.6	800.7	780.3	775.9	767.5
15°	794.0	785.6	759.9	745.6	738.1
17.5°	778.1	766.0	734.3	717.6	705.6
20°	759.9	744.8	707.1	688.2	671.6
22.5°	740.3	723.0	679.1	653.5	642.2
25°	720.7	696.5	646.6	615.7	604.3
27.5°	697.3	671.6	616.4	580.9	563.5
30°	672.4	643.6	583.2	544.7	524.2
32.5°	648.1	613.4	551.5	506.1	487.3
35°	621.0	582.5	516.0	468.4	451.7
37.5°	594.5	552.9	482.7	430.6	411.7
40°	566.5	521.3	448.0	394.4	374.7
42.5°	537.9	489.6	413.2	357.3	338.5
45°	507.7	457.0	377.8	324.1	305.9
47.5°	479.0	425.4	343.8	290.0	273.5
50°	447.3	393.6	310.5	258.3	242.6
52.5°	416.2	359.5	278.7	228.9	214.6
55°	386.0	327.1	245.5	200.3	185.8
57.5°	355.1	294.6	216.1	173.8	161.7
60°	323.4	262.9	185.1	146.6	134.5
62.5°	292.4	232.0	158.6	122.4	116.3
65°	260.6	199.4	131.5	105.8	103.5
67.5°	230.5	169.2	105.8	92.9	90.7
70°	198.6	139.8	87.6	80.1	77.1
72.5°	168.4	112.5	73.2	67.3	65.7
75°	139.0	86.0	60.4	55.1	54.4
77.5°	109.6	61.2	47.6	44.5	43.0
80°	82.3	43.8	36.3	33.2	33.2
82.5°	57.4	29.5	24.9	23.4	23.4
85°	32.4	16.6	14.3	14.3	14.3
87.5°	12.1	6.1	6.1	5.3	5.3
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: P907877

CATALOG NUMBER: DFN2DIP-HX2F0-020D020US840-RLONL

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



TEST NUMBER: P907877
 CATALOG NUMBER: DFN2DIP-HX2F0-020D020US840-RLONL

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	9.00	9.80	9.99	10.80	12.13	4.98	5.78	5.98	6.78	8.11
	3H	10.65	11.36	11.65	12.37	13.72	6.15	6.87	7.16	7.88	9.23
	4H	11.24	11.91	12.26	12.93	14.28	6.59	7.26	7.61	8.28	9.64
	6H	11.64	12.26	12.67	13.28	14.65	6.89	7.51	7.92	8.53	9.90
	8H	11.75	12.34	12.79	13.38	14.74	6.97	7.57	8.01	8.60	9.96
	12H	11.80	12.36	12.84	13.39	14.78	7.01	7.57	8.05	8.60	9.99
4H	2H	9.01	9.68	10.03	10.70	12.05	5.56	6.24	6.58	7.25	8.61
	3H	10.81	11.37	11.84	12.41	13.78	6.89	7.45	7.92	8.49	9.86
	4H	11.48	11.99	12.52	13.03	14.42	7.42	7.93	8.46	8.97	10.36
	6H	11.97	12.41	13.02	13.47	14.85	7.82	8.26	8.87	9.32	10.70
	8H	12.13	12.54	13.18	13.59	14.99	7.93	8.35	8.99	9.40	10.80
	12H	12.21	12.58	13.28	13.64	15.05	7.99	8.36	9.06	9.43	10.83
8H	4H	11.44	11.85	12.49	12.90	14.30	7.68	8.09	8.73	9.14	10.55
	6H	11.98	12.32	13.05	13.41	14.81	8.17	8.51	9.25	9.61	11.01
	8H	12.18	12.47	13.26	13.55	14.97	8.35	8.65	9.43	9.73	11.15
	12H	12.30	12.56	13.38	13.63	15.09	8.45	8.72	9.54	9.79	11.25
12H	4H	11.39	11.76	12.46	12.83	14.23	7.68	8.05	8.75	9.12	10.53
	6H	11.95	12.25	13.03	13.33	14.74	8.22	8.52	9.30	9.59	11.01
	8H	12.15	12.41	13.24	13.49	14.95	8.41	8.67	9.49	9.74	11.20