

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: P921535

Luminaire Tested: DFN2DIP-HX2F0-030D020US940-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921535
REPORT IS A COMBINATION OF REPORTS P900673 AND P897595
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-030D020US940-FLLONL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

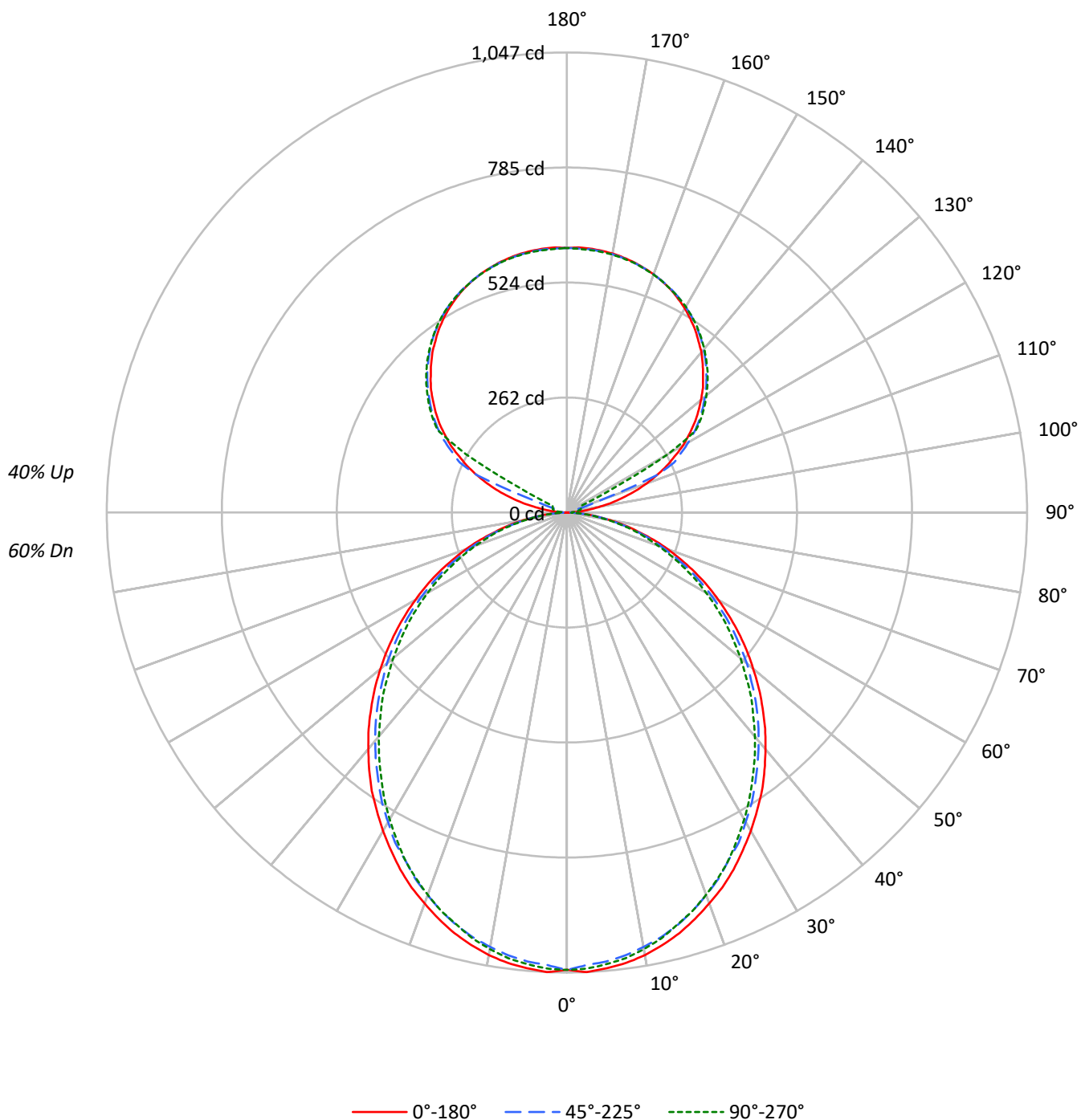
Lumens per Lamp: N/A
Luminaire Lumens: 4413.9 lumens
Efficiency: N/A
Efficacy: 109.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 40.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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	110	110	110	110		102	102	102	102		89	89	89		77	77	77		65	65	65
1	100	96	92	88		93	90	86	83		78	75	73		67	66	64		58	56	55
2	91	84	77	72		85	78	73	68		68	64	61		59	56	53		51	49	47
3	83	73	66	60		77	69	62	57		60	55	51		52	48	45		45	42	40
4	76	65	57	51		71	61	54	48		54	48	44		47	42	39		40	37	34
5	70	58	50	44		65	55	47	42		48	42	38		42	37	34		36	33	30
6	64	52	44	38		60	49	42	36		43	37	33		38	33	30		33	29	26
7	60	47	39	33		56	44	37	32		39	33	29		35	30	26		30	26	23
8	55	43	35	30		52	40	33	28		36	30	26		32	27	23		28	24	21
9	52	39	32	26		48	37	30	25		33	27	23		29	24	21		26	22	19
10	48	36	29	24		45	34	27	23		30	25	21		27	22	19		24	20	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2453	2453	2453
5°	2453	2412	2430
10°	2429	2374	2393
15°	2389	2329	2337
20°	2337	2269	2280
25°	2285	2198	2215
30°	2221	2132	2133
35°	2160	2055	2047
40°	2085	1977	1965
45°	2010	1898	1880
50°	1929	1816	1783
55°	1843	1720	1692
60°	1745	1608	1588
65°	1639	1490	1466
70°	1503	1347	1333
75°	1316	1176	1205
80°	1089	956	972
85°	740	601	601

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2010 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	98.0	2.2
10°-20°	275.6	6.2
20°-30°	405.1	9.2
30°-40°	470.5	10.7
40°-50°	469.9	10.6
50°-60°	409.8	9.3
60°-70°	302.9	6.9
70°-80°	171.4	3.9
80°-90°	46.3	1.0
90°-100°	19.8	0.4
100°-110°	74.0	1.7
110°-120°	196.2	4.4
120°-130°	325.4	7.4
130°-140°	345.7	7.8
140°-150°	321.3	7.3
150°-160°	258.3	5.9
160°-170°	166.4	3.8
170°-180°	57.3	1.3
0°-30°	778.7	17.6
0°-40°	1249.2	28.3
0°-60°	2128.9	48.2
0°-90°	2649.4	60.0
90°-120°	290.0	6.6
90°-150°	1282.5	29.1
90°-180°	1765.0	40.0
0°-180°	4413.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1041	1041	1041	1041	1041	
5°	1041	1037	1026	1034	1032	99
15°	991	985	972	976	971	279
25°	897	889	872	874	872	413
35°	774	764	748	742	737	483
45°	630	623	608	597	592	486
55°	476	470	458	446	442	426
65°	321	315	305	296	291	318
75°	168	166	161	155	157	179
85°	41	40	39	36	35	46
90°	0	5	9	11	12	4
95°	28	14	17	19	19	33
105°	132	145	27	31	33	141
115°	250	258	269	67	36	247
125°	354	360	368	371	372	316
135°	438	445	449	453	452	338
145°	508	508	515	518	516	318
155°	560	556	561	564	560	258
165°	590	587	588	592	588	167
175°	603	600	601	604	600	57
180°	602	602	602	602	602	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1040.9	1040.9	1040.9	1040.9	1040.9
2.5°	1047.0	1042.0	1030.9	1040.9	1039.0
5°	1040.9	1037.0	1025.9	1033.9	1032.0
7.5°	1033.9	1028.0	1016.9	1025.0	1023.0
10°	1023.0	1015.9	1004.0	1011.9	1009.0
12.5°	1007.9	1001.9	990.0	994.9	992.9
15°	990.9	985.0	971.9	975.9	970.9
17.5°	969.8	963.9	950.8	955.8	950.8
20°	946.8	940.8	926.8	929.8	925.9
22.5°	923.9	914.9	901.8	901.8	899.7
25°	896.8	888.9	871.8	873.8	871.8
27.5°	866.7	859.7	846.8	843.8	838.8
30°	836.8	828.8	813.8	810.7	806.7
32.5°	804.8	798.8	782.7	776.7	772.7
35°	773.7	763.7	747.7	741.6	736.6
37.5°	738.7	729.7	713.6	706.6	701.6
40°	702.7	694.6	678.6	669.7	665.7
42.5°	667.6	659.6	643.6	633.6	627.6
45°	629.6	622.6	607.5	596.6	592.5
47.5°	592.5	585.6	569.5	558.5	552.5
50°	553.5	548.5	534.5	520.5	515.5
52.5°	515.5	508.5	495.5	484.5	477.4
55°	476.5	470.5	458.4	446.5	441.5
57.5°	437.4	432.4	419.4	407.3	403.3
60°	398.3	394.4	380.4	369.3	366.4
62.5°	360.3	353.3	343.3	333.3	329.3
65°	321.4	315.3	305.3	296.3	291.3
67.5°	281.3	276.3	267.2	260.3	256.3
70°	244.2	240.2	231.2	224.2	220.3
72.5°	206.3	202.2	197.2	190.2	187.3
75°	168.1	166.2	161.1	155.2	157.2
77.5°	134.1	130.1	128.0	125.1	122.2
80°	100.1	99.1	97.0	94.1	92.1
82.5°	68.0	68.0	67.1	63.0	63.0
85°	41.0	40.0	39.1	36.0	35.0
87.5°	18.0	16.1	14.0	11.1	10.0
90°	0.4	5.3	8.6	10.9	11.8
92.5°	10.9	9.2	10.4	11.3	11.8
95°	28.3	13.9	16.9	19.2	18.7
97.5°	50.9	15.2	22.2	23.5	24.0
100°	77.1	17.4	24.8	28.3	29.2
102.5°	105.8	105.0	25.7	30.5	31.8
105°	132.4	145.4	26.6	31.3	33.1
107.5°	163.4	174.2	27.5	32.2	34.0
110°	193.0	202.1	76.2	32.7	34.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	220.8	228.6	221.2	33.5	34.9
115°	250.4	257.8	268.8	67.1	35.8
117.5°	276.1	284.8	292.2	230.0	115.8
120°	304.9	311.4	319.2	324.5	265.6
122.5°	329.2	336.2	344.9	347.5	348.0
125°	354.1	359.7	368.0	371.0	372.4
127.5°	376.7	382.8	389.4	393.7	394.1
130°	398.1	405.0	409.8	414.6	414.2
132.5°	419.8	425.5	430.3	434.2	433.8
135°	438.2	445.1	449.0	453.4	452.5
137.5°	457.3	462.5	466.9	471.3	469.9
140°	476.0	479.6	484.3	488.2	486.1
142.5°	491.7	494.8	500.4	503.9	501.7
145°	508.3	507.8	515.2	518.3	516.1
147.5°	522.6	521.3	528.7	530.8	529.1
150°	536.5	533.5	540.5	543.1	540.9
152.5°	548.3	544.8	551.3	554.0	550.9
155°	559.6	555.7	561.0	563.6	560.1
157.5°	568.8	565.3	569.3	572.3	568.8
160°	576.7	574.0	576.7	579.3	576.2
162.5°	583.5	580.9	583.2	586.2	582.3
165°	589.7	587.1	588.4	591.5	588.4
167.5°	594.5	591.8	593.2	596.3	592.3
170°	598.4	595.8	596.6	599.7	595.8
172.5°	601.0	598.4	599.3	602.4	598.4
175°	603.2	600.1	601.0	604.0	599.7
177.5°	604.0	601.0	601.5	604.5	600.6
180°	601.9	601.9	601.9	601.9	601.9

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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	11.13	12.09	11.99	12.98	14.10	10.71	11.66	11.57	12.55	13.67
	3H	12.77	13.63	13.65	14.53	15.68	12.31	13.17	13.19	14.07	15.22
	4H	13.35	14.16	14.24	15.06	16.22	12.89	13.70	13.78	14.60	15.76
	6H	13.73	14.48	14.64	15.39	16.56	13.27	14.02	14.18	14.93	16.10
	8H	13.83	14.54	14.74	15.47	16.64	13.37	14.09	14.29	15.01	16.18
	12H	13.87	14.55	14.79	15.47	16.67	13.41	14.09	14.33	15.01	16.21
4H	2H	11.59	12.41	12.49	13.31	14.47	11.25	12.07	12.15	12.97	14.13
	3H	13.44	14.12	14.35	15.05	16.22	13.05	13.73	13.96	14.67	15.84
	4H	14.14	14.76	15.06	15.69	16.88	13.74	14.36	14.66	15.29	16.49
	6H	14.63	15.17	15.57	16.12	17.32	14.24	14.77	15.17	15.73	16.93
	8H	14.77	15.27	15.71	16.22	17.43	14.38	14.88	15.31	15.82	17.04
	12H	14.84	15.29	15.80	16.26	17.47	14.44	14.89	15.39	15.85	17.07
8H	4H	14.33	14.83	15.27	15.78	16.99	13.98	14.48	14.92	15.43	16.64
	6H	14.94	15.35	15.90	16.34	17.55	14.58	15.00	15.55	15.99	17.20
	8H	15.14	15.51	16.11	16.49	17.71	14.79	15.15	15.76	16.13	17.36
	12H	15.26	15.58	16.24	16.55	17.83	14.89	15.21	15.87	16.19	17.46
12H	4H	14.32	14.77	15.27	15.73	16.95	13.97	14.43	14.93	15.39	16.61
	6H	14.96	15.33	15.93	16.31	17.54	14.62	14.99	15.59	15.97	17.19
	8H	15.19	15.51	16.17	16.48	17.76	14.84	15.17	15.82	16.14	17.42