

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: P921737

Luminaire Tested: DFN2DIP-HX3F0-080D030US940-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P921737
REPORT IS A COMBINATION OF REPORTS P900732 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-080D030US940-RLLONL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

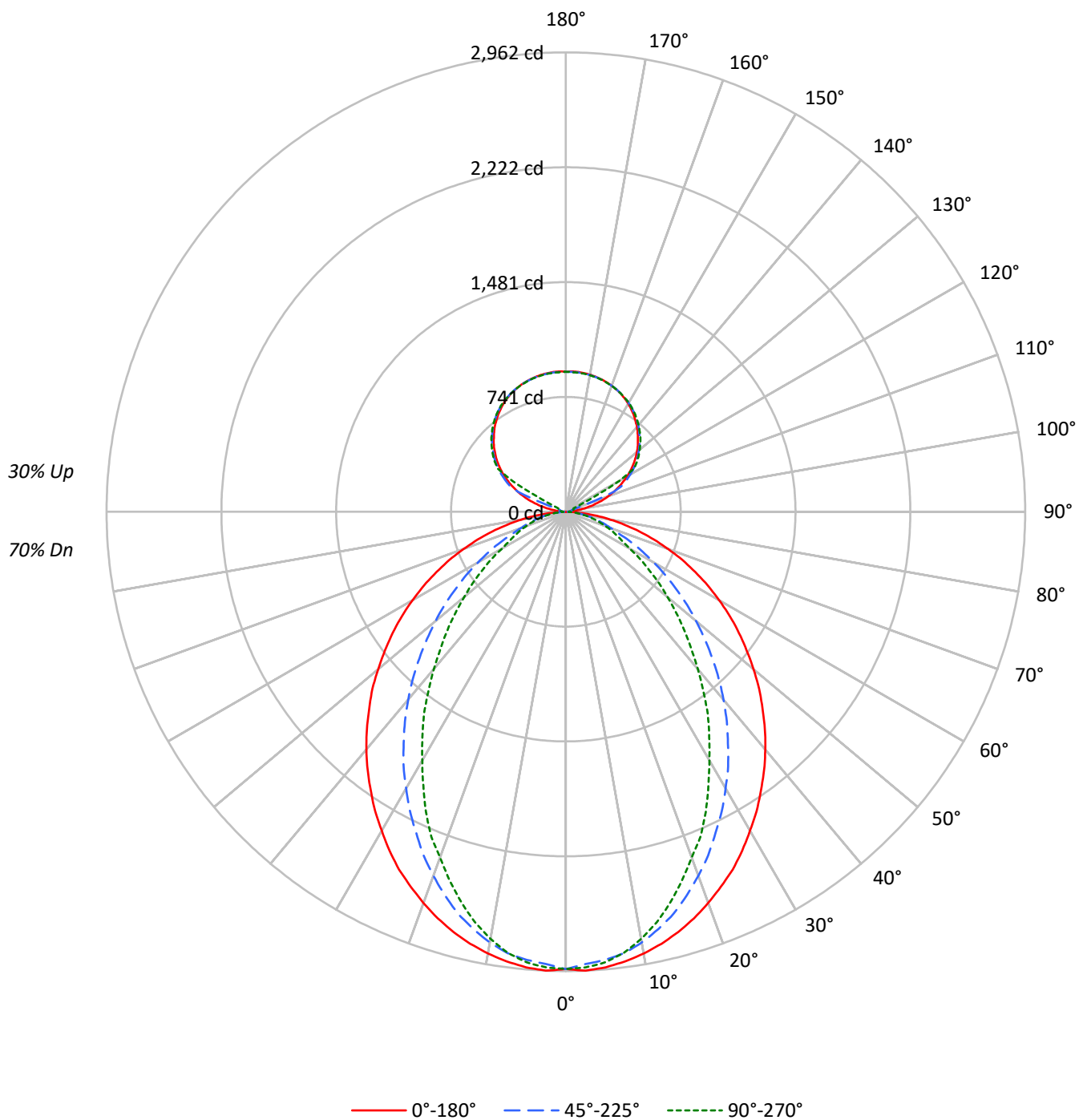
Lumens per Lamp: N/A
Luminaire Lumens: 8712.1 lumens
Efficiency: N/A
Efficacy: 84.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 102.9
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9971
Total Harmonic Distortion (THDi): 0.049
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	112	112	112	112	106	106	106	106	94	94	94	84	84	84	74	74	74
1	103	99	95	92	97	93	90	87	84	81	79	75	73	71	67	65	64
2	94	87	81	76	89	83	77	73	74	70	67	67	63	61	59	57	55
3	86	77	70	64	82	73	67	62	66	61	57	59	55	52	53	50	48
4	79	69	61	55	75	65	58	53	59	54	49	53	49	45	48	45	42
5	73	62	54	48	69	59	52	46	53	47	43	48	44	40	44	40	37
6	68	56	48	42	64	53	46	41	49	42	38	44	39	35	40	36	33
7	63	51	43	37	60	49	41	36	44	38	34	40	35	32	37	32	29
8	59	46	39	33	56	44	37	32	41	35	30	37	32	28	34	30	27
9	55	43	35	30	52	41	34	29	37	32	27	34	29	26	31	27	24
10	51	39	32	27	49	38	31	26	35	29	25	32	27	24	29	25	22

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3415	3415	3415
5°	3419	3359	3381
10°	3384	3290	3269
15°	3336	3179	3097
20°	3272	3027	2887
25°	3208	2857	2684
30°	3121	2683	2427
35°	3037	2496	2202
40°	2950	2303	1944
45°	2850	2088	1710
50°	2747	1873	1481
55°	2638	1642	1262
60°	2513	1401	1037
65°	2368	1157	931
70°	2193	929	840
75°	1972	814	761
80°	1653	676	653
85°	1130	439	479

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2850 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	276.3	3.2
10°-20°	758.6	8.7
20°-30°	1065.0	12.2
30°-40°	1160.9	13.3
40°-50°	1067.0	12.2
50°-60°	838.0	9.6
60°-70°	545.4	6.3
70°-80°	280.8	3.2
80°-90°	73.3	0.8
90°-100°	29.8	0.3
100°-110°	111.0	1.3
110°-120°	294.3	3.4
120°-130°	488.2	5.6
130°-140°	518.5	6.0
140°-150°	481.9	5.5
150°-160°	387.5	4.4
160°-170°	249.7	2.9
170°-180°	85.9	1.0
0°-30°	2099.9	24.1
0°-40°	3260.8	37.4
0°-60°	5165.8	59.3
0°-90°	6065.2	69.6
90°-120°	435.1	5.0
90°-150°	1923.7	22.1
90°-180°	2647.0	30.4
0°-180°	8712.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2948	2948	2948	2948	2948	
5°	2948	2935	2900	2924	2916	280
15°	2804	2775	2684	2634	2607	790
25°	2546	2460	2284	2175	2134	1171
35°	2193	2057	1822	1654	1595	1373
45°	1793	1614	1334	1144	1081	1385
55°	1363	1155	867	707	656	1218
65°	921	704	464	374	365	913
75°	491	304	214	195	192	519
85°	115	59	51	51	51	132
90°	1	8	13	16	18	8
95°	42	21	25	29	28	50
105°	199	218	40	47	50	212
115°	376	387	403	101	54	370
125°	531	540	552	557	559	474
135°	657	668	674	680	679	508
145°	762	762	773	777	774	477
155°	840	834	841	845	840	387
165°	884	881	883	887	883	250
175°	905	900	902	906	900	86
180°	903	903	903	903	903	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2948.4	2948.4	2948.4	2948.4	2948.4
2.5°	2961.6	2948.4	2918.9	2945.8	2940.4
5°	2948.4	2935.1	2900.2	2924.3	2916.3
7.5°	2924.3	2908.4	2871.0	2881.6	2868.2
10°	2892.3	2873.6	2820.4	2812.2	2796.3
12.5°	2852.4	2828.3	2756.1	2740.2	2710.8
15°	2804.3	2774.8	2684.2	2633.6	2606.9
17.5°	2748.2	2705.4	2593.4	2534.8	2492.0
20°	2684.2	2630.7	2497.4	2430.9	2371.9
22.5°	2614.9	2553.4	2398.6	2308.0	2268.1
25°	2545.5	2460.1	2283.9	2174.7	2134.5
27.5°	2462.8	2371.9	2177.2	2051.8	1990.4
30°	2374.8	2273.1	2059.8	1923.9	1851.6
32.5°	2289.3	2166.5	1947.9	1787.7	1720.9
35°	2193.3	2057.2	1822.5	1654.4	1595.4
37.5°	2099.9	1953.0	1705.0	1520.7	1454.2
40°	2001.2	1841.2	1582.2	1392.8	1323.4
42.5°	1899.8	1729.1	1459.6	1262.0	1195.4
45°	1793.1	1614.2	1334.2	1144.5	1080.6
47.5°	1691.8	1502.4	1214.2	1024.5	965.9
50°	1579.6	1390.3	1096.7	912.4	856.6
52.5°	1470.1	1269.9	984.5	808.5	757.9
55°	1363.3	1155.3	867.1	707.1	656.5
57.5°	1254.1	1040.6	763.2	613.8	571.0
60°	1141.9	928.5	653.6	517.7	475.0
62.5°	1032.7	819.2	560.3	432.3	411.1
65°	920.6	704.3	464.2	373.7	365.4
67.5°	813.9	597.6	373.7	328.1	320.2
70°	701.8	493.7	309.4	282.8	272.1
72.5°	595.0	397.4	258.8	237.6	232.1
75°	490.9	304.1	213.5	194.7	192.3
77.5°	387.0	216.0	168.2	157.4	152.0
80°	290.7	154.9	128.0	117.4	117.4
82.5°	202.7	104.2	88.0	82.7	82.7
85°	114.7	58.6	50.6	50.6	50.6
87.5°	42.7	21.2	21.2	18.7	18.7
90°	0.6	7.8	13.0	16.4	17.6
92.5°	16.4	13.7	15.7	17.0	17.6
95°	42.4	20.9	25.4	28.8	28.1
97.5°	76.4	22.9	33.3	35.3	35.9
100°	115.7	26.1	37.3	42.4	43.8
102.5°	158.7	157.5	38.5	45.7	47.7
105°	198.6	218.2	39.9	47.0	49.7
107.5°	245.0	261.3	41.2	48.3	51.0
110°	289.4	303.1	114.3	49.0	51.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	331.3	343.0	331.9	50.3	52.3
115°	375.6	386.7	403.1	100.6	53.6
117.5°	414.2	427.2	438.4	344.9	173.8
120°	457.3	467.1	478.8	486.7	398.5
122.5°	493.8	504.4	517.5	521.3	522.0
125°	531.1	539.6	552.1	556.6	558.6
127.5°	565.1	574.2	584.1	590.6	591.2
130°	597.1	607.6	614.7	621.9	621.3
132.5°	629.7	638.3	645.4	651.3	650.7
135°	657.2	667.7	673.5	680.1	678.8
137.5°	685.9	693.8	700.3	706.9	704.9
140°	714.0	719.3	726.4	732.3	729.1
142.5°	737.6	742.2	750.6	755.8	752.6
145°	762.4	761.7	772.8	777.4	774.1
147.5°	783.9	781.9	793.1	796.3	793.7
150°	804.9	800.3	810.7	814.6	811.4
152.5°	822.4	817.3	827.1	831.0	826.4
155°	839.5	833.7	841.4	845.3	840.2
157.5°	853.2	848.0	853.9	858.4	853.2
160°	865.0	861.0	865.0	868.9	864.2
162.5°	875.4	871.5	874.8	879.3	873.4
165°	884.5	880.7	882.6	887.2	882.6
167.5°	891.7	887.8	889.7	894.4	888.5
170°	897.6	893.7	895.0	899.6	893.7
172.5°	901.5	897.6	898.9	903.5	897.6
175°	904.7	900.2	901.5	906.1	899.6
177.5°	906.1	901.5	902.2	906.8	900.9
180°	902.9	902.9	902.9	902.9	902.9

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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	13.03	14.05	13.81	14.85	15.81	9.01	10.03	9.79	10.82	11.79
	3H	14.72	15.63	15.51	16.43	17.43	10.21	11.12	11.00	11.93	12.92
	4H	15.33	16.19	16.14	17.00	18.01	10.67	11.53	11.47	12.34	13.34
	6H	15.75	16.55	16.57	17.37	18.39	10.99	11.78	11.81	12.60	13.62
	8H	15.88	16.64	16.71	17.47	18.49	11.09	11.84	11.91	12.68	13.70
	12H	15.95	16.67	16.78	17.50	18.54	11.13	11.85	11.97	12.68	13.73
4H	2H	13.07	13.93	13.88	14.75	15.75	9.62	10.49	10.44	11.30	12.30
	3H	14.91	15.63	15.73	16.47	17.49	10.99	11.70	11.81	12.55	13.57
	4H	15.61	16.25	16.44	17.10	18.15	11.54	12.19	12.37	13.03	14.08
	6H	16.12	16.68	16.98	17.55	18.60	11.96	12.52	12.81	13.39	14.44
	8H	16.30	16.82	17.15	17.68	18.75	12.09	12.62	12.95	13.48	14.54
	12H	16.40	16.87	17.27	17.75	18.82	12.16	12.63	13.04	13.52	14.59
8H	4H	15.59	16.11	16.44	16.97	18.04	11.83	12.35	12.68	13.21	14.28
	6H	16.15	16.58	17.03	17.49	18.55	12.35	12.78	13.23	13.68	14.75
	8H	16.36	16.75	17.26	17.65	18.73	12.53	12.92	13.43	13.82	14.90
	12H	16.50	16.84	17.40	17.73	18.87	12.66	13.00	13.55	13.89	15.02
12H	4H	15.55	16.02	16.42	16.90	17.97	11.84	12.31	12.71	13.19	14.26
	6H	16.13	16.51	17.02	17.41	18.49	12.39	12.78	13.29	13.68	14.76
	8H	16.35	16.69	17.25	17.58	18.71	12.61	12.95	13.50	13.84	14.97