

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: P908073

Luminaire Tested: DFN2DIP-HX3F0-070D030US840-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P908073
REPORT IS A COMBINATION OF REPORTS P900730 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-070D030US840-RLLONL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

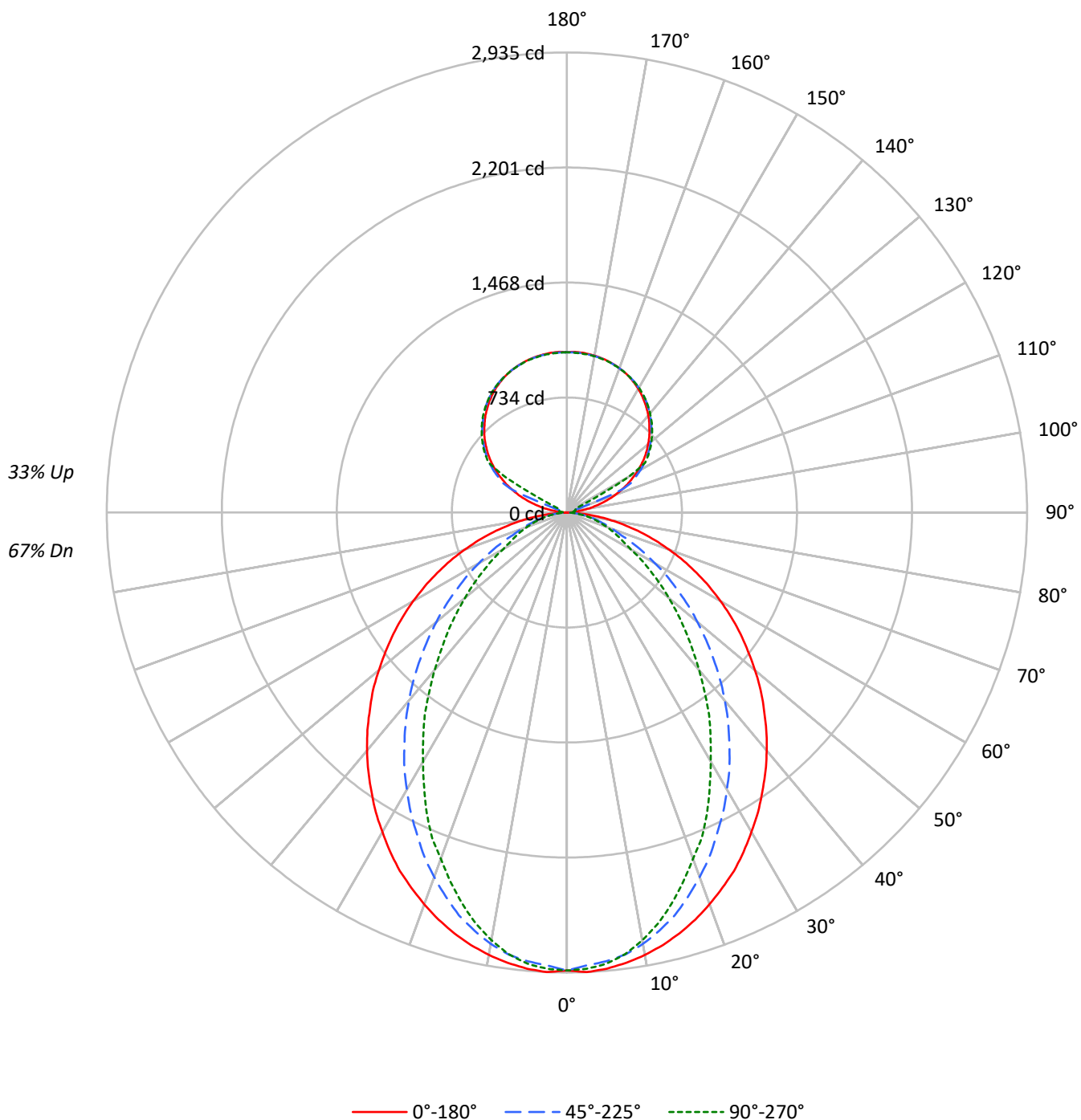
Lumens per Lamp: N/A
Luminaire Lumens: 9008.0 lumens
Efficiency: N/A
Efficacy: 97.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 92.1
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9789
Total Harmonic Distortion (THDi): 0.074
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			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	111	111	111	111	105	105	105	105	93	93	93	82	82	82	71	71	71	69	69	69
1	102	98	94	91	96	93	89	86	82	80	78	73	71	69	64	63	62	61	60	58
2	94	86	80	75	88	82	76	72	73	69	65	65	62	59	57	55	53	51	49	49
3	86	77	69	64	81	72	66	61	65	60	56	58	54	51	51	48	46	44	42	42
4	79	68	60	54	74	65	58	52	58	53	48	52	48	44	46	43	40	38	37	37
5	73	61	53	47	68	58	51	45	52	47	42	47	42	39	42	38	35	33	33	33
6	67	55	47	41	63	53	45	40	48	42	37	43	38	34	38	35	31	29	29	29
7	62	50	42	37	59	48	41	36	43	37	33	39	34	31	35	31	28	26	26	26
8	58	46	38	33	55	44	37	32	40	34	30	36	31	28	33	29	26	23	23	23
9	54	42	35	30	51	40	33	29	37	31	27	33	29	25	30	26	23	21	21	21
10	51	39	32	27	48	37	31	26	34	28	24	31	26	23	28	24	21	19	19	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3384	3384	3384
5°	3388	3328	3350
10°	3353	3261	3239
15°	3305	3151	3069
20°	3243	3000	2861
25°	3179	2831	2660
30°	3093	2659	2405
35°	3009	2473	2182
40°	2924	2282	1926
45°	2825	2070	1694
50°	2722	1855	1468
55°	2614	1627	1251
60°	2490	1389	1028
65°	2347	1147	923
70°	2173	921	832
75°	1955	807	753
80°	1638	669	647
85°	1119	436	476

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2825 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	273.8	3.0
10°-20°	751.7	8.3
20°-30°	1055.3	11.7
30°-40°	1150.4	12.8
40°-50°	1057.3	11.7
50°-60°	830.4	9.2
60°-70°	540.5	6.0
70°-80°	278.2	3.1
80°-90°	72.8	0.8
90°-100°	33.7	0.4
100°-110°	125.7	1.4
110°-120°	333.3	3.7
120°-130°	552.9	6.1
130°-140°	587.3	6.5
140°-150°	545.8	6.1
150°-160°	438.8	4.9
160°-170°	282.8	3.1
170°-180°	97.3	1.1
0°-30°	2080.9	23.1
0°-40°	3231.2	35.9
0°-60°	5118.9	56.8
0°-90°	6010.4	66.7
90°-120°	492.7	5.5
90°-150°	2178.7	24.2
90°-180°	2998.0	33.3
0°-180°	9008.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2922	2922	2922	2922	2922	
5°	2922	2908	2874	2898	2890	277
15°	2779	2750	2660	2610	2583	783
25°	2522	2438	2263	2155	2115	1160
35°	2173	2038	1806	1639	1581	1360
45°	1777	1600	1322	1134	1071	1372
55°	1351	1145	859	701	651	1207
65°	912	698	460	370	362	904
75°	486	301	212	193	190	515
85°	114	58	50	50	50	130
90°	1	9	15	19	20	9
95°	48	24	29	33	32	57
105°	225	247	45	53	56	240
115°	425	438	456	114	61	419
125°	602	611	625	630	633	536
135°	744	756	763	770	769	575
145°	863	863	875	880	877	540
155°	951	944	953	957	952	438
165°	1002	997	1000	1005	1000	283
175°	1025	1020	1021	1026	1019	98
180°	1022	1022	1022	1022	1022	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2921.6	2921.6	2921.6	2921.6	2921.6
2.5°	2934.8	2921.6	2892.5	2919.1	2913.8
5°	2921.6	2908.4	2874.0	2897.8	2889.9
7.5°	2897.8	2882.1	2845.1	2855.4	2842.3
10°	2866.1	2847.6	2794.8	2786.7	2771.0
12.5°	2826.5	2802.7	2731.2	2715.4	2686.2
15°	2778.8	2749.7	2659.9	2609.7	2583.3
17.5°	2723.3	2681.0	2569.9	2511.7	2469.4
20°	2659.9	2606.9	2474.8	2408.8	2350.5
22.5°	2591.2	2530.3	2376.8	2287.0	2247.6
25°	2522.4	2437.7	2263.2	2155.0	2115.2
27.5°	2440.5	2350.5	2157.5	2033.3	1972.4
30°	2353.3	2252.6	2041.0	1906.4	1834.9
32.5°	2268.6	2146.9	1930.3	1771.5	1705.3
35°	2173.4	2038.5	1806.0	1639.4	1581.0
37.5°	2080.9	1935.3	1689.6	1506.9	1441.1
40°	1983.0	1824.5	1567.8	1380.2	1311.4
42.5°	1882.6	1713.4	1446.3	1250.5	1184.7
45°	1776.9	1599.5	1322.1	1134.2	1070.8
47.5°	1676.4	1488.7	1203.2	1015.2	957.2
50°	1565.3	1377.7	1086.7	904.1	848.9
52.5°	1456.7	1258.4	975.6	801.1	750.9
55°	1351.0	1144.8	859.2	700.7	650.6
57.5°	1242.7	1031.2	756.3	608.1	565.8
60°	1131.7	920.1	647.7	513.1	470.7
62.5°	1023.3	811.8	555.1	428.4	407.3
65°	912.2	697.9	460.1	370.3	362.1
67.5°	806.5	592.2	370.3	325.1	317.3
70°	695.4	489.2	306.6	280.2	269.5
72.5°	589.7	393.8	256.4	235.4	230.0
75°	486.5	301.2	211.5	193.0	190.5
77.5°	383.4	214.0	166.6	155.9	150.7
80°	288.1	153.4	126.8	116.4	116.4
82.5°	200.9	103.2	87.3	81.9	81.9
85°	113.6	58.1	50.2	50.2	50.2
87.5°	42.3	21.0	21.0	18.5	18.5
90°	0.7	8.9	14.7	18.6	19.9
92.5°	18.6	15.6	17.8	19.3	19.9
95°	48.1	23.6	28.8	32.6	31.8
97.5°	86.5	26.0	37.7	40.0	40.7
100°	131.0	29.6	42.2	48.1	49.6
102.5°	179.8	178.3	43.6	51.7	54.0
105°	224.9	247.1	45.1	53.2	56.2
107.5°	277.4	295.9	46.7	54.7	57.8
110°	327.8	343.3	129.5	55.5	58.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	375.2	388.4	375.9	57.0	59.2
115°	425.4	438.0	456.5	113.9	60.7
117.5°	469.1	483.8	496.4	390.6	196.8
120°	517.9	529.0	542.3	551.2	451.3
122.5°	559.3	571.2	586.0	590.4	591.2
125°	601.5	611.1	625.2	630.4	632.6
127.5°	640.0	650.3	661.5	668.8	669.5
130°	676.2	688.1	696.2	704.3	703.7
132.5°	713.2	722.9	730.9	737.6	736.9
135°	744.3	756.2	762.8	770.2	768.7
137.5°	776.8	785.7	793.1	800.5	798.3
140°	808.6	814.6	822.6	829.3	825.7
142.5°	835.4	840.5	850.1	856.0	852.3
145°	863.4	862.6	875.3	880.4	876.7
147.5°	887.8	885.6	898.2	901.8	898.9
150°	911.5	906.4	918.2	922.5	918.9
152.5°	931.4	925.5	936.7	941.1	935.9
155°	950.7	944.1	952.9	957.4	951.5
157.5°	966.2	960.4	967.0	972.2	966.2
160°	979.6	975.1	979.6	984.0	978.8
162.5°	991.4	986.9	990.7	995.8	989.2
165°	1001.7	997.3	999.6	1004.7	999.6
167.5°	1009.9	1005.4	1007.6	1012.9	1006.2
170°	1016.5	1012.1	1013.6	1018.8	1012.1
172.5°	1021.0	1016.5	1018.0	1023.2	1016.5
175°	1024.6	1019.5	1021.0	1026.1	1018.8
177.5°	1026.1	1021.0	1021.8	1026.9	1020.3
180°	1022.5	1022.5	1022.5	1022.5	1022.5

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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	12.77	13.76	13.58	14.59	15.60	8.75	9.74	9.56	10.56	11.57
	3H	14.46	15.34	15.28	16.17	17.22	9.95	10.83	10.77	11.66	12.71
	4H	15.07	15.90	15.90	16.74	17.79	10.40	11.23	11.24	12.08	13.13
	6H	15.49	16.26	16.34	17.11	18.17	10.73	11.49	11.57	12.34	13.41
	8H	15.62	16.35	16.47	17.21	18.28	10.82	11.55	11.68	12.42	13.48
	12H	15.68	16.38	16.54	17.24	18.33	10.87	11.56	11.73	12.42	13.51
4H	2H	12.81	13.64	13.65	14.48	15.54	9.36	10.19	10.20	11.03	12.09
	3H	14.65	15.34	15.50	16.21	17.28	10.72	11.41	11.57	12.29	13.35
	4H	15.34	15.97	16.20	16.84	17.93	11.27	11.90	12.13	12.77	13.87
	6H	15.85	16.40	16.73	17.29	18.39	11.69	12.24	12.57	13.13	14.23
	8H	16.03	16.53	16.91	17.42	18.54	11.82	12.33	12.71	13.22	14.33
	12H	16.13	16.58	17.03	17.49	18.61	11.89	12.35	12.79	13.26	14.37
8H	4H	15.32	15.82	16.20	16.71	17.82	11.56	12.06	12.44	12.95	14.07
	6H	15.88	16.30	16.79	17.23	18.34	12.07	12.49	12.98	13.43	14.54
	8H	16.09	16.46	17.01	17.39	18.52	12.26	12.63	13.18	13.56	14.69
	12H	16.23	16.56	17.15	17.47	18.66	12.38	12.71	13.31	13.63	14.81
12H	4H	15.27	15.73	16.18	16.64	17.76	11.57	12.02	12.47	12.93	14.05
	6H	15.85	16.23	16.77	17.15	18.28	12.12	12.49	13.04	13.42	14.55
	8H	16.08	16.40	17.00	17.32	18.50	12.34	12.66	13.26	13.58	14.76