

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: P913557

Luminaire Tested: DFN2DIP-HX3F0-080D040US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913557
REPORT IS A COMBINATION OF REPORTS P900746 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-080D040US927-RLLONL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

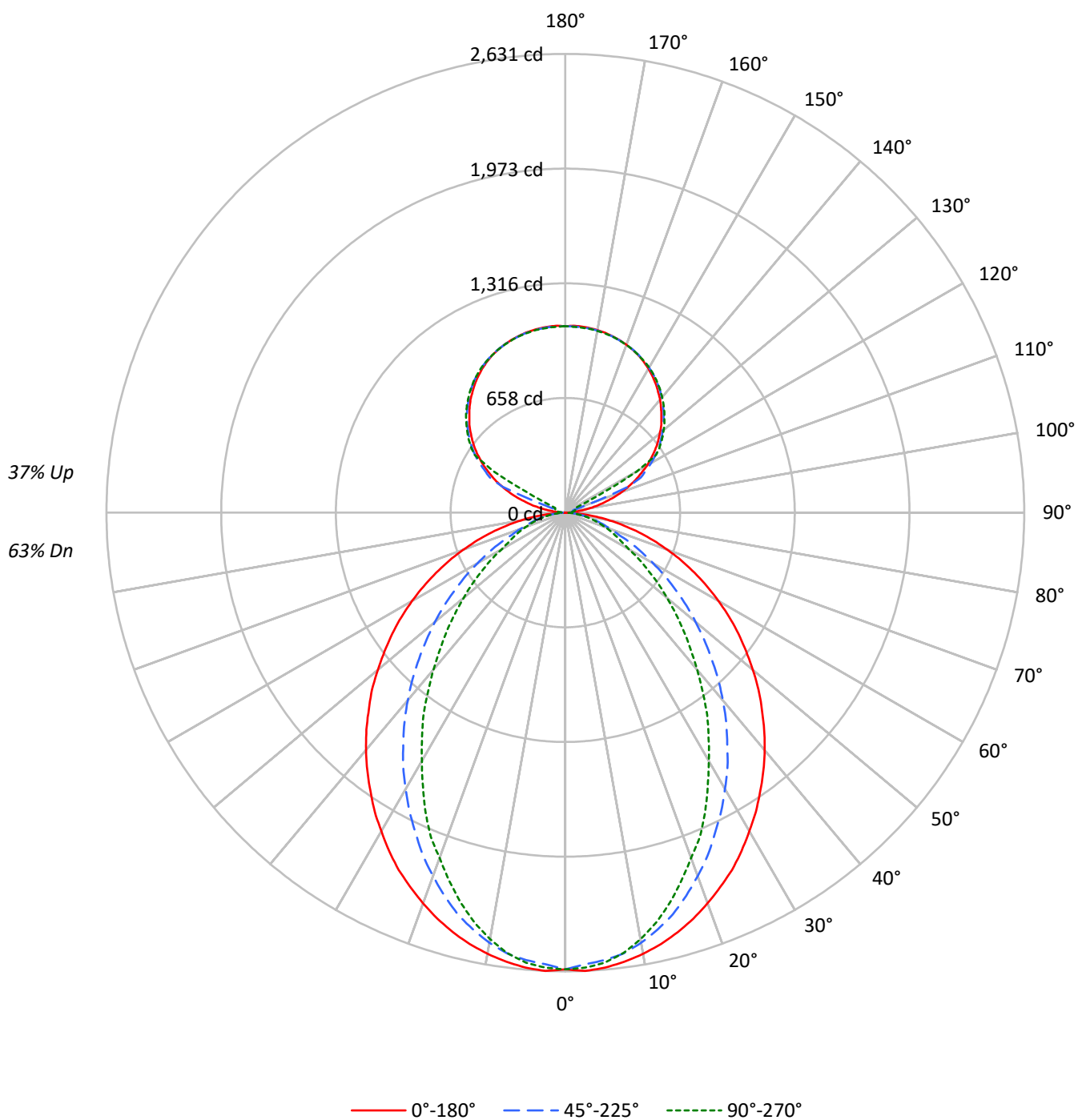
Lumens per Lamp: N/A
Luminaire Lumens: 8523.8 lumens
Efficiency: N/A
Efficacy: 77.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 109.7
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
RCR																	
0	110	110	110	110	103	103	103	103	91	91	91		79	79	79		68
1	101	97	93	90	95	91	88	85	80	78	76		71	69	67		61
2	93	86	80	75	87	81	75	71	71	67	64		63	60	57		55
3	85	76	69	63	80	72	65	60	63	58	54		56	52	49		49
4	78	68	60	54	73	64	57	52	57	51	47		50	46	43		44
5	72	61	53	47	67	57	50	45	51	45	41		46	41	37		40
6	67	55	47	41	62	52	45	39	46	41	36		41	37	33		37
7	62	50	42	36	58	47	40	35	42	36	32		38	33	30		34
8	58	45	38	32	54	43	36	31	39	33	29		35	30	27		31
9	54	42	34	29	51	40	33	28	36	30	26		32	27	24		29
10	50	38	31	26	47	37	30	25	33	28	24		30	25	22		27

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3034	3034	3034
5°	3038	2984	3003
10°	3006	2923	2904
15°	2963	2824	2751
20°	2907	2689	2565
25°	2850	2538	2384
30°	2773	2384	2156
35°	2698	2217	1956
40°	2621	2046	1727
45°	2532	1855	1519
50°	2440	1664	1316
55°	2344	1459	1121
60°	2232	1245	921
65°	2104	1028	827
70°	1948	826	746
75°	1752	723	676
80°	1469	600	580
85°	1004	390	426

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2532 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	245.5	2.9
10°-20°	673.9	7.9
20°-30°	946.1	11.1
30°-40°	1031.3	12.1
40°-50°	947.9	11.1
50°-60°	744.4	8.7
60°-70°	484.5	5.7
70°-80°	249.4	2.9
80°-90°	65.5	0.8
90°-100°	35.2	0.4
100°-110°	131.5	1.5
110°-120°	348.6	4.1
120°-130°	578.2	6.8
130°-140°	614.2	7.2
140°-150°	570.9	6.7
150°-160°	458.9	5.4
160°-170°	295.7	3.5
170°-180°	101.8	1.2
0°-30°	1865.5	21.9
0°-40°	2896.8	34.0
0°-60°	4589.2	53.8
0°-90°	5388.7	63.2
90°-120°	515.3	6.0
90°-150°	2278.7	26.7
90°-180°	3135.0	36.8
0°-180°	8523.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2619	2619	2619	2619	2619	
5°	2619	2608	2576	2598	2591	248
15°	2491	2465	2385	2340	2316	702
25°	2261	2186	2029	1932	1896	1040
35°	1948	1828	1619	1470	1417	1220
45°	1593	1434	1185	1017	960	1230
55°	1211	1026	770	628	583	1082
65°	818	626	412	332	325	811
75°	436	270	190	173	171	461
85°	102	52	45	45	45	117
90°	1	9	15	19	21	8
95°	50	25	30	34	33	60
105°	235	258	47	56	59	251
115°	445	458	477	119	64	438
125°	629	639	654	659	662	561
135°	778	791	798	806	804	601
145°	903	902	915	921	917	565
155°	994	988	997	1001	995	458
165°	1048	1043	1045	1051	1045	296
175°	1072	1066	1068	1073	1066	102
180°	1069	1069	1069	1069	1069	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2619.3	2619.3	2619.3	2619.3	2619.3
2.5°	2631.1	2619.3	2593.1	2617.0	2612.2
5°	2619.3	2607.5	2576.5	2597.9	2590.8
7.5°	2597.9	2583.8	2550.6	2559.9	2548.1
10°	2569.4	2552.9	2505.6	2498.3	2484.2
12.5°	2534.0	2512.6	2448.5	2434.4	2408.2
15°	2491.3	2465.1	2384.6	2339.6	2315.9
17.5°	2441.4	2403.5	2303.9	2251.9	2213.8
20°	2384.6	2337.1	2218.7	2159.6	2107.2
22.5°	2323.0	2268.4	2130.9	2050.4	2014.9
25°	2261.4	2185.5	2029.0	1932.0	1896.2
27.5°	2187.9	2107.2	1934.2	1822.8	1768.2
30°	2109.7	2019.4	1829.9	1709.1	1645.0
32.5°	2033.8	1924.7	1730.5	1588.2	1528.8
35°	1948.5	1827.6	1619.1	1469.7	1417.4
37.5°	1865.5	1735.0	1514.7	1351.0	1291.9
40°	1777.8	1635.7	1405.6	1237.3	1175.7
42.5°	1687.7	1536.1	1296.6	1121.2	1062.0
45°	1592.9	1434.0	1185.3	1016.8	960.0
47.5°	1502.9	1334.7	1078.6	910.1	858.1
50°	1403.3	1235.1	974.3	810.6	761.0
52.5°	1306.0	1128.1	874.6	718.3	673.3
55°	1211.2	1026.3	770.3	628.2	583.2
57.5°	1114.1	924.5	678.0	545.3	507.2
60°	1014.5	824.9	580.7	459.9	422.0
62.5°	917.4	727.8	497.7	384.0	365.2
65°	817.8	625.7	412.4	332.0	324.6
67.5°	723.0	530.9	332.0	291.4	284.5
70°	623.4	438.6	274.9	251.2	241.7
72.5°	528.6	353.1	229.9	211.0	206.2
75°	436.1	270.1	189.6	173.0	170.8
77.5°	343.8	191.9	149.4	139.8	135.1
80°	258.3	137.6	113.7	104.3	104.3
82.5°	180.1	92.5	78.2	73.4	73.4
85°	101.9	52.0	45.0	45.0	45.0
87.5°	37.9	18.9	18.9	16.6	16.6
90°	0.7	9.3	15.4	19.4	20.8
92.5°	19.4	16.2	18.5	20.1	20.8
95°	50.2	24.7	30.1	34.1	33.3
97.5°	90.5	27.1	39.5	41.8	42.5
100°	137.0	31.0	44.1	50.2	51.8
102.5°	188.0	186.6	45.6	54.1	56.5
105°	235.2	258.5	47.2	55.7	58.8
107.5°	290.2	309.5	48.8	57.3	60.4
110°	342.9	359.0	135.5	58.1	61.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	392.4	406.2	393.1	59.6	61.9
115°	444.9	458.0	477.4	119.1	63.5
117.5°	490.6	506.0	519.3	408.5	205.8
120°	541.7	553.3	567.2	576.5	472.1
122.5°	584.9	597.4	612.9	617.5	618.3
125°	629.1	639.2	653.9	659.3	661.6
127.5°	669.3	680.2	691.8	699.6	700.3
130°	707.3	719.7	728.1	736.6	735.9
132.5°	745.9	756.1	764.5	771.5	770.8
135°	778.5	790.9	797.8	805.6	804.1
137.5°	812.5	821.7	829.6	837.3	835.0
140°	845.7	852.0	860.5	867.4	863.6
142.5°	873.7	879.1	889.1	895.2	891.4
145°	903.1	902.3	915.4	920.8	916.9
147.5°	928.5	926.2	939.4	943.3	940.2
150°	953.3	947.9	960.4	965.0	961.1
152.5°	974.2	968.0	979.6	984.3	978.9
155°	994.3	987.5	996.7	1001.3	995.1
157.5°	1010.6	1004.4	1011.5	1016.8	1010.6
160°	1024.5	1019.9	1024.5	1029.1	1023.7
162.5°	1036.9	1032.3	1036.2	1041.6	1034.6
165°	1047.7	1043.1	1045.4	1050.8	1045.4
167.5°	1056.3	1051.5	1054.0	1059.4	1052.4
170°	1063.3	1058.6	1060.1	1065.6	1058.6
172.5°	1067.9	1063.3	1064.8	1070.2	1063.3
175°	1071.7	1066.3	1067.9	1073.2	1065.6
177.5°	1073.2	1067.9	1068.7	1074.1	1067.1
180°	1069.4	1069.4	1069.4	1069.4	1069.4

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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	12.11	13.06	12.95	13.92	14.99	8.09	9.04	8.93	9.90	10.97
	3H	13.79	14.64	14.65	15.51	16.61	9.28	10.13	10.14	11.00	12.10
	4H	14.40	15.20	15.27	16.08	17.19	9.73	10.54	10.61	11.41	12.52
	6H	14.82	15.56	15.70	16.44	17.57	10.06	10.80	10.94	11.68	12.80
	8H	14.95	15.65	15.84	16.55	17.67	10.15	10.85	11.04	11.75	12.87
	12H	15.01	15.68	15.91	16.57	17.72	10.20	10.86	11.09	11.76	12.91
4H	2H	12.14	12.95	13.02	13.82	14.93	8.69	9.50	9.57	10.37	11.48
	3H	13.98	14.64	14.86	15.55	16.67	10.05	10.72	10.94	11.62	12.75
	4H	14.67	15.27	15.56	16.18	17.33	10.60	11.21	11.50	12.11	13.26
	6H	15.18	15.70	16.09	16.63	17.78	11.02	11.54	11.93	12.47	13.62
	8H	15.35	15.84	16.27	16.76	17.93	11.15	11.64	12.06	12.56	13.72
	12H	15.45	15.89	16.38	16.83	18.00	11.22	11.65	12.15	12.60	13.77
8H	4H	14.64	15.13	15.56	16.05	17.22	10.88	11.37	11.80	12.29	13.46
	6H	15.20	15.61	16.15	16.57	17.74	11.40	11.80	12.34	12.77	13.93
	8H	15.42	15.77	16.37	16.73	17.91	11.59	11.94	12.54	12.90	14.08
	12H	15.55	15.87	16.51	16.82	18.05	11.71	12.02	12.66	12.97	14.20
12H	4H	14.60	15.04	15.53	15.98	17.15	10.89	11.33	11.83	12.27	13.44
	6H	15.18	15.54	16.13	16.49	17.67	11.45	11.80	12.40	12.76	13.94
	8H	15.40	15.71	16.35	16.66	17.89	11.66	11.97	12.61	12.92	14.15