

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: P924463

Luminaire Tested: DFN2DIP-HX3F0-080D030US950-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P924463
REPORT IS A COMBINATION OF REPORTS P900731 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-080D030US950-FLLONL
Description: 3 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

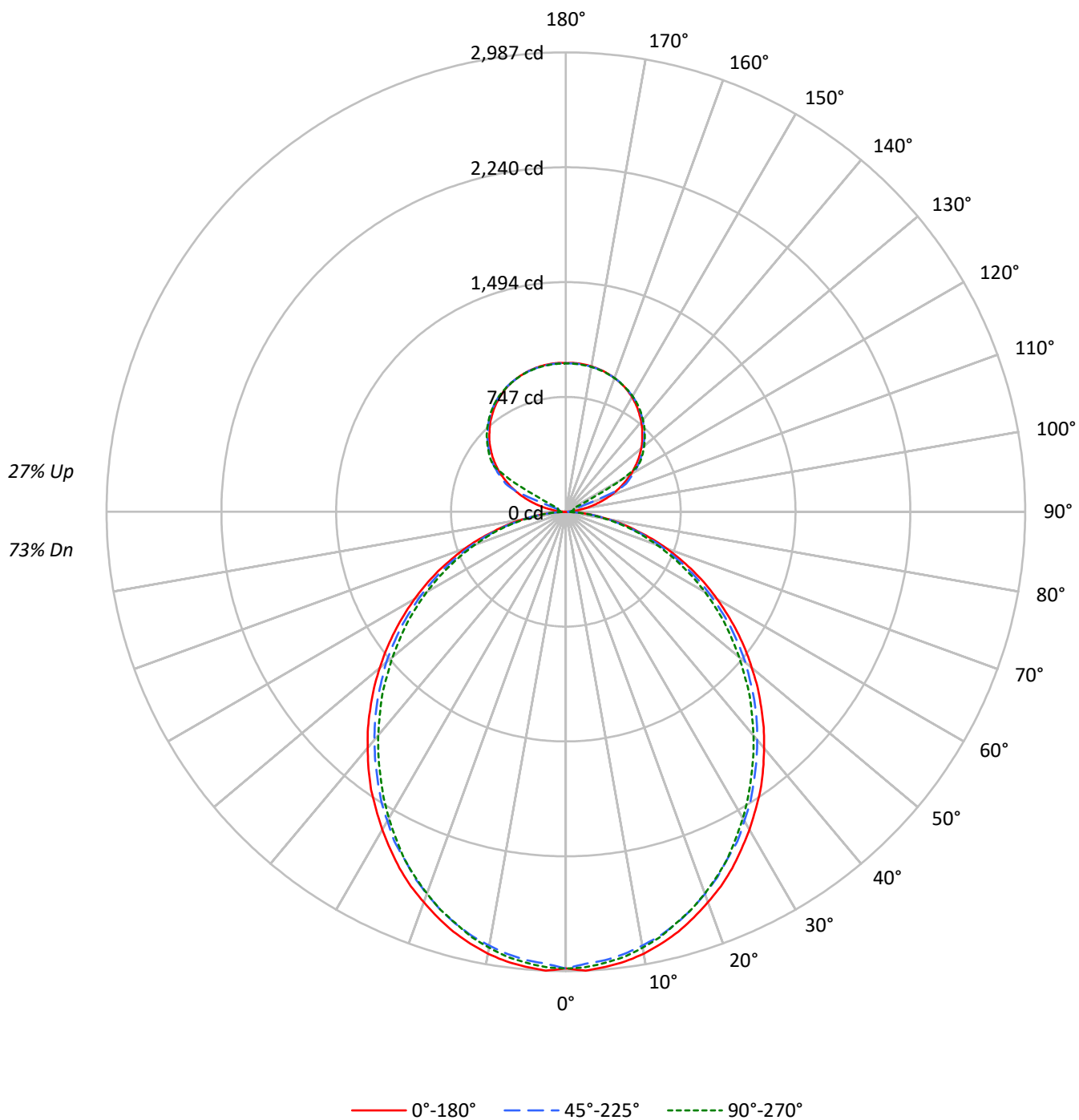
Lumens per Lamp: N/A
Luminaire Lumens: 10389.1 lumens
Efficiency: N/A
Efficacy: 101.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Direct

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	50	30	10
RCR																				
0	113	113	113	113	107	107	107	107	96	96	96	86	86	86	77	77	77	77	77	73
1	103	98	94	91	97	94	90	87	84	82	79	76	74	72	68	67	65	65	65	61
2	94	86	80	74	89	82	76	71	74	69	66	67	63	60	60	57	55	55	55	51
3	86	76	68	62	81	72	65	60	65	60	55	59	55	51	53	50	47	47	47	44
4	78	67	59	53	74	64	57	51	58	52	47	53	48	44	48	44	40	40	40	37
5	72	60	51	45	68	57	50	44	52	46	41	47	42	38	43	39	35	35	35	32
6	67	54	45	39	63	52	44	38	47	41	36	43	37	33	39	35	31	31	31	29
7	62	49	41	35	58	47	39	34	43	36	32	39	34	30	36	31	28	28	28	25
8	57	44	36	31	54	43	35	30	39	33	28	36	30	27	33	28	25	25	25	23
9	53	41	33	28	51	39	32	27	36	30	25	33	28	24	30	26	22	22	22	20
10	50	38	30	25	48	36	29	24	33	27	23	31	25	22	28	24	20	20	20	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3440	3440	3440
5°	3444	3390	3413
10°	3414	3342	3365
15°	3363	3284	3291
20°	3293	3205	3215
25°	3224	3112	3128
30°	3138	3024	3017
35°	3056	2921	2900
40°	2956	2817	2789
45°	2855	2713	2675
50°	2746	2603	2543
55°	2631	2477	2421
60°	2500	2327	2282
65°	2358	2171	2118
70°	2177	1981	1940
75°	1927	1753	1773
80°	1625	1462	1460
85°	1153	968	947

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 2855 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	279.5	2.7
10°-20°	786.4	7.6
20°-30°	1155.7	11.1
30°-40°	1342.3	12.9
40°-50°	1340.6	12.9
50°-60°	1169.0	11.3
60°-70°	864.1	8.3
70°-80°	488.9	4.7
80°-90°	130.7	1.3
90°-100°	31.9	0.3
100°-110°	118.7	1.1
110°-120°	314.9	3.0
120°-130°	522.3	5.0
130°-140°	554.8	5.3
140°-150°	515.6	5.0
150°-160°	414.5	4.0
160°-170°	267.1	2.6
170°-180°	91.9	0.9
0°-30°	2221.6	21.4
0°-40°	3563.9	34.3
0°-60°	6073.6	58.5
0°-90°	7557.4	72.7
90°-120°	465.5	4.5
90°-150°	2058.1	19.8
90°-180°	2832.0	27.3
0°-180°	10389.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2970	2970	2970	2970	2970	
5°	2970	2958	2927	2950	2944	282
15°	2827	2810	2773	2784	2770	796
25°	2558	2536	2487	2493	2487	1177
35°	2207	2179	2133	2116	2102	1378
45°	1796	1776	1733	1702	1691	1386
55°	1359	1342	1308	1274	1259	1215
65°	917	900	871	845	831	906
75°	480	474	460	443	448	512
85°	117	114	112	103	100	130
90°	1	8	14	18	19	10
95°	45	22	27	31	30	54
105°	212	233	43	50	53	227
115°	402	414	431	108	57	396
125°	568	577	591	596	598	507
135°	703	714	721	728	726	543
145°	816	815	827	832	828	510
155°	898	892	900	904	899	414
165°	946	942	944	949	944	267
175°	968	963	964	969	962	92
180°	966	966	966	966	966	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2969.6	2969.6	2969.6	2969.6	2969.6
2.5°	2986.9	2972.7	2941.2	2969.6	2964.2
5°	2969.6	2958.4	2927.0	2949.7	2944.2
7.5°	2949.7	2932.7	2901.2	2924.2	2918.5
10°	2918.5	2898.4	2864.2	2886.9	2878.5
12.5°	2875.5	2858.5	2824.2	2838.4	2832.7
15°	2827.0	2810.0	2772.7	2784.2	2770.0
17.5°	2767.0	2750.0	2712.7	2727.0	2712.7
20°	2701.3	2684.3	2644.3	2652.8	2641.5
22.5°	2635.8	2610.0	2572.7	2572.7	2567.0
25°	2558.5	2535.8	2487.4	2492.8	2487.4
27.5°	2472.8	2452.8	2415.8	2407.3	2393.1
30°	2387.4	2364.3	2321.7	2313.2	2301.6
32.5°	2295.9	2278.9	2233.1	2215.9	2204.4
35°	2207.4	2178.9	2133.1	2115.9	2101.7
37.5°	2107.4	2081.6	2035.9	2015.9	2001.7
40°	2004.7	1981.6	1936.0	1910.5	1898.9
42.5°	1904.8	1881.7	1836.3	1807.4	1790.6
45°	1796.3	1776.3	1733.2	1702.0	1690.6
47.5°	1690.6	1670.5	1624.8	1593.3	1576.3
50°	1579.1	1564.8	1524.8	1484.8	1470.6
52.5°	1470.6	1450.6	1413.6	1382.2	1362.1
55°	1359.4	1342.1	1307.9	1273.7	1259.4
57.5°	1247.9	1233.7	1196.4	1162.2	1150.6
60°	1136.4	1125.2	1085.2	1053.7	1045.2
62.5°	1027.9	1008.0	979.5	951.0	939.5
65°	916.8	899.5	871.0	845.2	831.0
67.5°	802.5	788.0	762.5	742.6	731.1
70°	696.8	685.3	659.6	639.6	628.3
72.5°	588.3	576.9	562.6	542.6	534.1
75°	479.6	474.1	459.6	442.7	448.4
77.5°	382.6	371.1	365.4	356.9	348.4
80°	285.7	282.7	276.9	268.5	262.6
82.5°	194.2	194.2	191.5	179.9	179.9
85°	117.0	114.2	111.5	102.7	100.0
87.5°	51.5	45.8	40.0	31.5	28.5
90°	0.7	8.4	13.9	17.6	18.8
92.5°	17.6	14.7	16.8	18.2	18.8
95°	45.4	22.3	27.2	30.8	30.1
97.5°	81.8	24.5	35.6	37.8	38.4
100°	123.7	28.0	39.9	45.4	46.8
102.5°	169.8	168.5	41.2	48.8	51.0
105°	212.5	233.4	42.6	50.3	53.1
107.5°	262.1	279.5	44.1	51.7	54.6
110°	309.7	324.3	122.3	52.5	55.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	354.4	366.9	355.1	53.8	55.9
115°	401.8	413.7	431.2	107.6	57.3
117.5°	443.1	457.1	469.0	369.0	185.9
120°	489.2	499.7	512.3	520.7	426.3
122.5°	528.3	539.6	553.6	557.7	558.5
125°	568.2	577.3	590.6	595.5	597.6
127.5°	604.5	614.3	624.9	631.8	632.5
130°	638.8	650.1	657.7	665.3	664.7
132.5°	673.7	682.9	690.5	696.8	696.1
135°	703.1	714.4	720.6	727.6	726.2
137.5°	733.8	742.2	749.3	756.2	754.1
140°	763.9	769.5	777.1	783.4	780.0
142.5°	789.1	794.0	803.1	808.6	805.2
145°	815.7	814.9	826.8	831.7	828.2
147.5°	838.7	836.6	848.5	851.9	849.2
150°	861.1	856.2	867.4	871.5	868.0
152.5°	879.9	874.3	884.8	889.0	884.2
155°	898.1	891.9	900.2	904.4	898.9
157.5°	912.8	907.3	913.6	918.4	912.8
160°	925.4	921.2	925.4	929.6	924.6
162.5°	936.5	932.3	935.9	940.7	934.4
165°	946.3	942.2	944.3	949.1	944.3
167.5°	954.0	949.8	951.9	956.9	950.6
170°	960.3	956.1	957.5	962.4	956.1
172.5°	964.5	960.3	961.7	966.6	960.3
175°	967.9	963.1	964.5	969.4	962.4
177.5°	969.4	964.5	965.3	970.1	963.8
180°	965.9	965.9	965.9	965.9	965.9

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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	13.40	14.51	14.13	15.26	16.17	12.97	14.08	13.70	14.84	15.74
	3H	15.07	16.07	15.82	16.83	17.77	14.60	15.60	15.35	16.36	17.30
	4H	15.66	16.60	16.43	17.38	18.33	15.19	16.14	15.96	16.91	17.86
	6H	16.07	16.94	16.85	17.72	18.68	15.60	16.47	16.38	17.25	18.21
	8H	16.18	17.01	16.97	17.81	18.77	15.71	16.54	16.50	17.34	18.30
	12H	16.23	17.02	17.03	17.82	18.81	15.76	16.55	16.55	17.34	18.33
4H	2H	13.89	14.83	14.66	15.60	16.55	13.54	14.49	14.31	15.26	16.21
	3H	15.77	16.55	16.55	17.36	18.33	15.38	16.16	16.16	16.97	17.94
	4H	16.48	17.20	17.28	18.01	19.00	16.08	16.80	16.88	17.61	18.60
	6H	17.01	17.63	17.82	18.46	19.46	16.60	17.22	17.41	18.05	19.05
	8H	17.16	17.74	17.97	18.57	19.58	16.75	17.33	17.57	18.16	19.17
	12H	17.24	17.76	18.08	18.61	19.63	16.82	17.34	17.66	18.20	19.21
8H	4H	16.70	17.28	17.51	18.11	19.12	16.34	16.92	17.16	17.75	18.76
	6H	17.33	17.81	18.18	18.68	19.69	16.97	17.45	17.82	18.32	19.33
	8H	17.55	17.97	18.41	18.84	19.87	17.18	17.61	18.04	18.48	19.51
	12H	17.69	18.06	18.55	18.92	20.00	17.31	17.68	18.17	18.54	19.63
12H	4H	16.69	17.22	17.53	18.07	19.08	16.34	16.87	17.18	17.72	18.73
	6H	17.36	17.79	18.22	18.66	19.68	17.01	17.44	17.87	18.31	19.34
	8H	17.61	17.98	18.47	18.84	19.93	17.25	17.63	18.11	18.49	19.57