

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: P913533

Luminaire Tested: DFN2DIP-HX3F0-070D040US927-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913533
REPORT IS A COMBINATION OF REPORTS P900744 AND P897645
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-070D040US927-RLLONL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

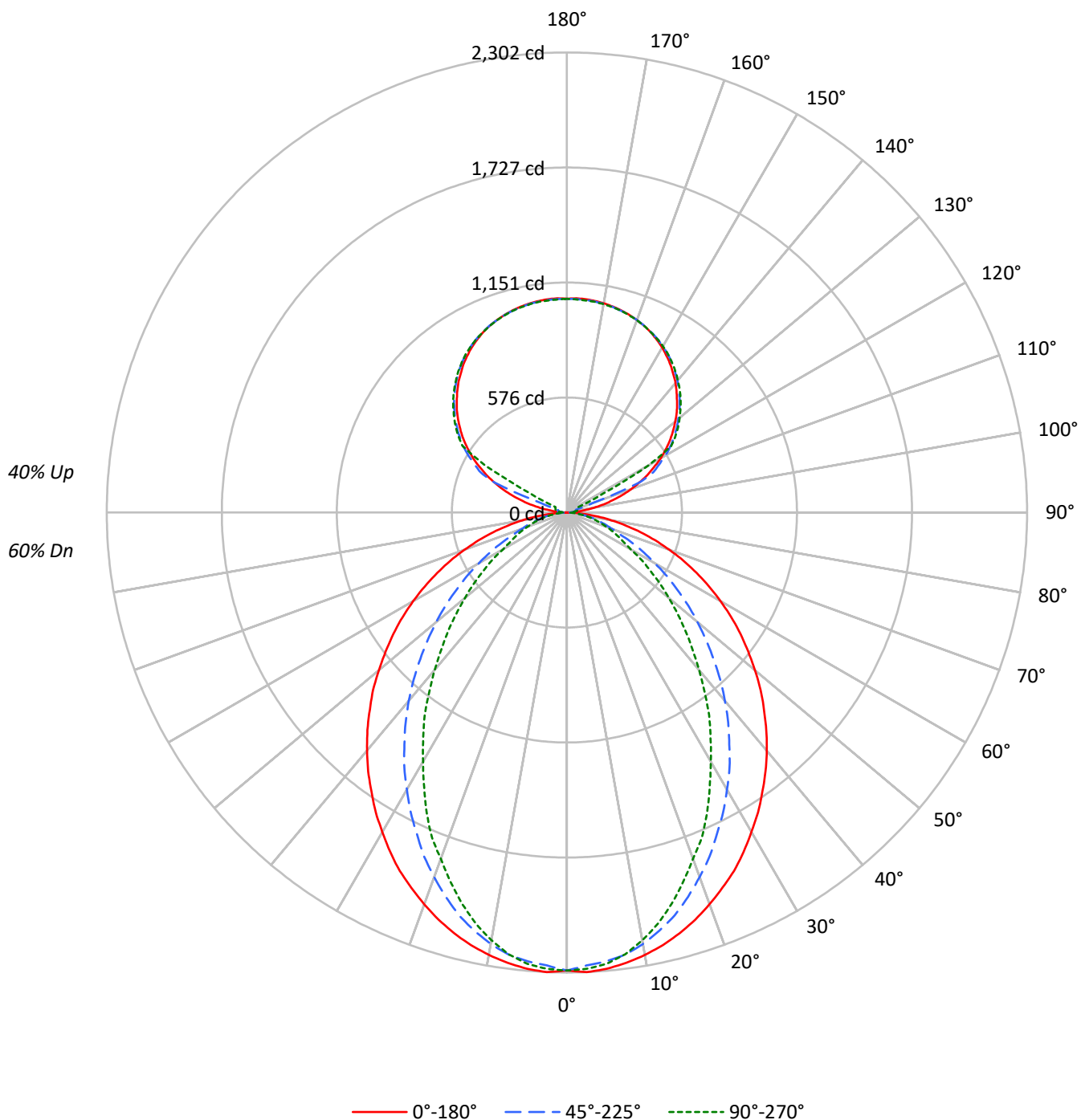
Lumens per Lamp: N/A
Luminaire Lumens: 7850.5 lumens
Efficiency: N/A
Efficacy: 79.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.84' x L: 3.28' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 98.9
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
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	101	96	93	89	94	90	87	84	79	77	74	68	67	65	59	57	56
2	92	85	79	74	86	80	74	70	70	66	62	61	58	55	52	50	48
3	84	75	68	62	79	71	64	59	62	57	53	54	51	47	47	44	42
4	78	67	59	53	72	63	56	51	56	50	46	49	45	41	42	39	37
5	71	60	52	46	67	57	49	44	50	44	40	44	40	36	38	35	32
6	66	54	46	40	62	51	44	39	45	40	35	40	35	32	35	32	29
7	61	49	41	36	57	46	39	34	41	36	31	37	32	29	32	29	26
8	57	45	37	32	53	42	35	31	38	32	28	34	29	26	30	26	23
9	53	41	34	29	50	39	32	28	35	29	25	31	27	23	28	24	21
10	50	38	31	26	47	36	29	25	32	27	23	29	24	21	26	22	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2655	2655	2655
5°	2658	2611	2628
10°	2630	2558	2541
15°	2593	2471	2407
20°	2544	2353	2244
25°	2493	2221	2086
30°	2426	2086	1887
35°	2360	1940	1712
40°	2293	1790	1511
45°	2216	1623	1329
50°	2135	1456	1152
55°	2051	1276	981
60°	1953	1089	806
65°	1841	899	724
70°	1705	722	653
75°	1533	633	591
80°	1285	525	508
85°	878	342	373

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2216 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	214.8	2.7
10°-20°	589.7	7.5
20°-30°	827.9	10.5
30°-40°	902.4	11.5
40°-50°	829.4	10.6
50°-60°	651.4	8.3
60°-70°	424.0	5.4
70°-80°	218.2	2.8
80°-90°	57.6	0.7
90°-100°	35.2	0.4
100°-110°	131.5	1.7
110°-120°	348.6	4.4
120°-130°	578.2	7.4
130°-140°	614.2	7.8
140°-150°	570.9	7.3
150°-160°	458.9	5.8
160°-170°	295.7	3.8
170°-180°	101.8	1.3
0°-30°	1632.3	20.8
0°-40°	2534.7	32.3
0°-60°	4015.5	51.2
0°-90°	4715.3	60.1
90°-120°	515.3	6.6
90°-150°	2278.7	29.0
90°-180°	3135.0	39.9
0°-180°	7850.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2292	2292	2292	2292	2292	
5°	2292	2282	2254	2273	2267	217
15°	2180	2157	2086	2047	2026	614
25°	1979	1912	1775	1690	1659	910
35°	1705	1599	1417	1286	1240	1067
45°	1394	1255	1037	890	840	1076
55°	1060	898	674	550	510	947
65°	716	548	361	290	284	709
75°	382	236	166	151	149	404
85°	89	46	39	39	39	102
90°	1	9	15	19	21	7
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°	2291.9	2291.9	2291.9	2291.9	2291.9
2.5°	2302.2	2291.9	2269.0	2289.9	2285.7
5°	2291.9	2281.5	2254.5	2273.2	2267.0
7.5°	2273.2	2260.8	2231.8	2239.9	2229.6
10°	2248.3	2233.8	2192.4	2186.0	2173.7
12.5°	2217.2	2198.5	2142.5	2130.1	2107.2
15°	2179.8	2157.0	2086.5	2047.2	2026.5
17.5°	2136.3	2103.1	2015.9	1970.3	1937.1
20°	2086.5	2044.9	1941.3	1889.6	1843.8
22.5°	2032.7	1984.9	1864.5	1794.1	1763.1
25°	1978.7	1912.2	1775.4	1690.4	1659.2
27.5°	1914.5	1843.8	1692.4	1595.0	1547.2
30°	1846.0	1767.0	1601.1	1495.5	1439.4
32.5°	1779.6	1684.1	1514.2	1389.6	1337.7
35°	1704.9	1599.1	1416.7	1286.0	1240.2
37.5°	1632.4	1518.1	1325.4	1182.1	1130.4
40°	1555.5	1431.2	1229.9	1082.7	1028.7
42.5°	1476.8	1344.1	1134.6	981.0	929.3
45°	1393.8	1254.7	1037.1	889.7	839.9
47.5°	1315.0	1167.8	943.8	796.4	750.8
50°	1227.9	1080.7	852.5	709.2	665.9
52.5°	1142.7	987.1	765.3	628.4	589.1
55°	1059.8	898.0	674.0	549.7	510.3
57.5°	974.9	808.9	593.3	477.1	443.9
60°	887.7	721.8	508.1	402.5	369.2
62.5°	802.7	636.8	435.5	336.0	319.5
65°	715.6	547.5	360.9	290.5	284.1
67.5°	632.6	464.5	290.5	255.0	248.9
70°	545.5	383.7	240.5	219.8	211.4
72.5°	462.6	309.0	201.1	184.7	180.5
75°	381.6	236.3	165.9	151.4	149.4
77.5°	300.8	167.9	130.7	122.3	118.2
80°	226.0	120.3	99.5	91.3	91.3
82.5°	157.6	81.0	68.4	64.2	64.2
85°	89.1	45.6	39.4	39.4	39.4
87.5°	33.2	16.5	16.5	14.5	14.5
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	11.39	12.31	12.26	13.20	14.32	7.36	8.28	8.24	9.17	10.29
	3H	13.06	13.89	13.95	14.78	15.93	8.55	9.38	9.44	10.27	11.42
	4H	13.67	14.45	14.57	15.35	16.51	9.01	9.78	9.91	10.69	11.85
	6H	14.09	14.81	15.00	15.72	16.89	9.33	10.04	10.24	10.95	12.12
	8H	14.22	14.90	15.14	15.82	16.99	9.42	10.10	10.34	11.03	12.20
	12H	14.28	14.92	15.20	15.85	17.04	9.46	10.11	10.39	11.03	12.23
4H	2H	11.41	12.19	12.32	13.10	14.25	7.97	8.74	8.87	9.65	10.81
	3H	13.24	13.89	14.16	14.82	16.00	9.32	9.96	10.23	10.90	12.07
	4H	13.93	14.52	14.86	15.45	16.65	9.87	10.45	10.79	11.38	12.58
	6H	14.45	14.95	15.39	15.91	17.11	10.28	10.79	11.23	11.75	12.95
	8H	14.62	15.09	15.56	16.04	17.25	10.41	10.88	11.36	11.83	13.05
	12H	14.71	15.14	15.67	16.10	17.32	10.48	10.90	11.44	11.87	13.09
8H	4H	13.91	14.38	14.85	15.33	16.54	10.15	10.62	11.09	11.57	12.78
	6H	14.47	14.86	15.44	15.85	17.06	10.66	11.05	11.63	12.04	13.26
	8H	14.68	15.02	15.66	16.00	17.23	10.85	11.19	11.83	12.18	13.41
	12H	14.82	15.12	15.80	16.09	17.37	10.97	11.27	11.95	12.25	13.52
12H	4H	13.86	14.29	14.82	15.25	16.47	10.16	10.58	11.12	11.55	12.77
	6H	14.44	14.79	15.42	15.77	17.00	10.71	11.06	11.69	12.04	13.27
	8H	14.66	14.96	15.64	15.94	17.22	10.92	11.22	11.90	12.20	13.48