

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: P916260

Luminaire Tested: DFN2DIP-HX3F0-070D040US930-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P916260
REPORT IS A COMBINATION OF REPORTS P899224 AND P896089
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX3F0-070D040US930-RLLFLL
Description: 3 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

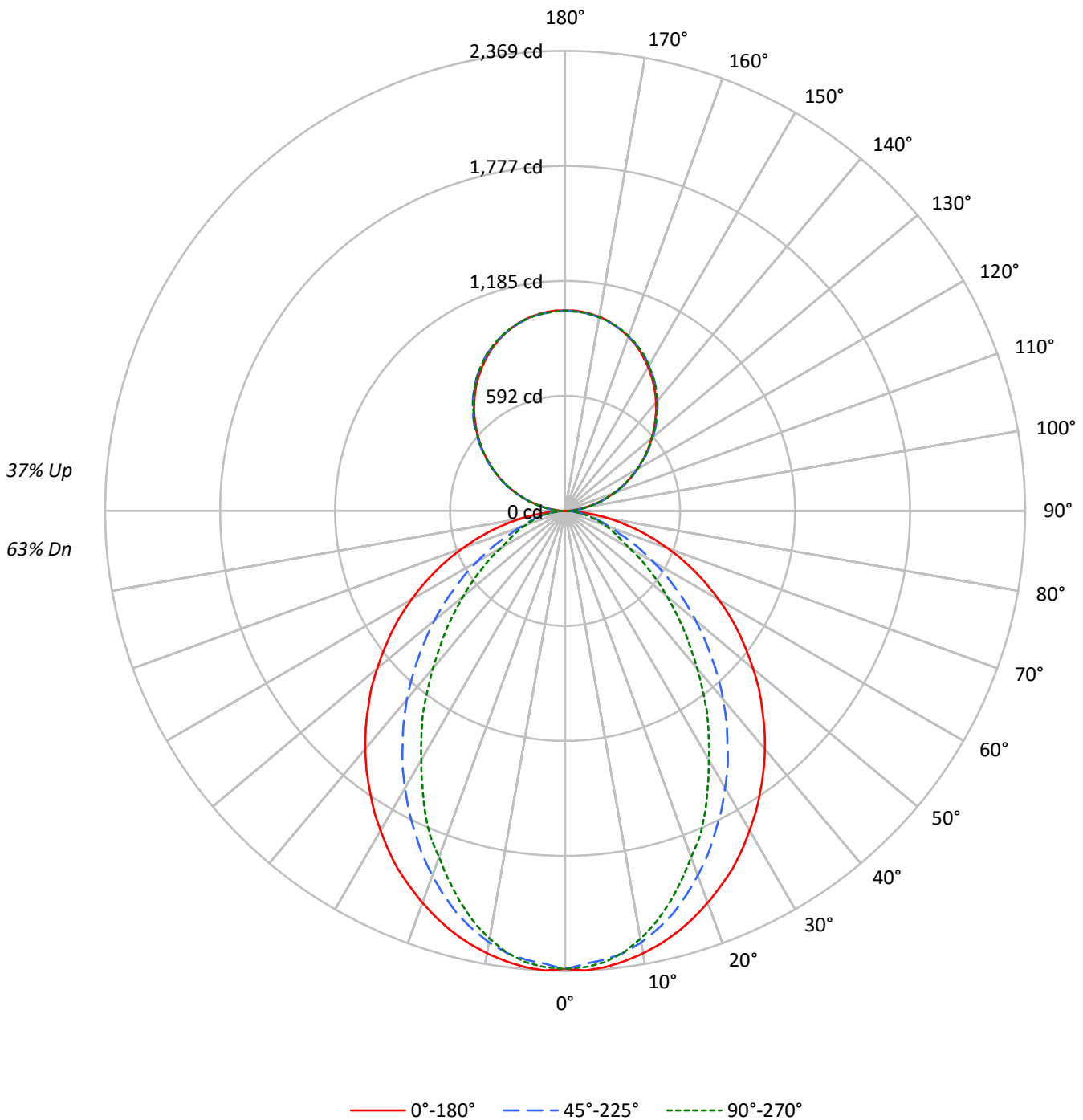
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7737.1 lumens
Efficiency: N/A
Efficacy: 78.2 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			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	110	110	110	110	103	103	103	103	90	90	90	79	79	79	68	68	68	68	68	68	63
1	101	97	93	90	95	91	88	85	80	78	76	70	68	67	61	60	58	58	58	58	54
2	93	85	80	75	87	80	75	71	71	67	64	62	59	57	54	52	50	50	50	50	46
3	85	76	69	63	79	71	65	60	63	58	54	56	52	49	49	46	43	43	43	43	40
4	78	67	60	54	73	64	57	51	57	51	47	50	46	42	44	41	38	38	38	38	35
5	72	61	53	47	67	57	50	45	51	45	41	45	41	37	40	36	33	33	33	33	31
6	67	55	47	41	62	52	44	39	46	40	36	41	36	33	36	33	30	30	30	30	27
7	62	50	42	36	58	47	40	35	42	36	32	38	33	29	33	30	27	27	27	27	24
8	57	45	38	32	54	43	36	31	39	33	29	35	30	26	31	27	24	24	24	24	22
9	54	42	34	29	50	40	33	28	36	30	26	32	27	24	29	25	22	22	22	22	20
10	50	38	31	26	47	36	30	25	33	27	24	30	25	22	27	23	20	20	20	20	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2732	2732	2732
5°	2735	2687	2705
10°	2707	2632	2615
15°	2669	2543	2478
20°	2618	2422	2310
25°	2566	2286	2147
30°	2497	2146	1942
35°	2429	1997	1761
40°	2360	1842	1555
45°	2280	1671	1368
50°	2197	1498	1185
55°	2111	1314	1010
60°	2010	1121	830
65°	1895	926	745
70°	1754	743	672
75°	1578	651	608
80°	1323	540	523
85°	903	351	384

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2280 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	221.1	2.9
10°-20°	606.9	7.8
20°-30°	852.0	11.0
30°-40°	928.8	12.0
40°-50°	853.6	11.0
50°-60°	670.4	8.7
60°-70°	436.4	5.6
70°-80°	224.6	2.9
80°-90°	60.3	0.8
90°-100°	63.8	0.8
100°-110°	202.8	2.6
110°-120°	347.0	4.5
120°-130°	456.4	5.9
130°-140°	512.3	6.6
140°-150°	502.4	6.5
150°-160°	421.4	5.4
160°-170°	279.5	3.6
170°-180°	97.7	1.3
0°-30°	1679.9	21.7
0°-40°	2608.7	33.7
0°-60°	4132.7	53.4
0°-90°	4853.9	62.7
90°-120°	613.6	7.9
90°-150°	2084.7	26.9
90°-180°	2883.0	37.3
0°-180°	7737.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2359	2359	2359	2359	2359	
5°	2359	2348	2320	2340	2333	224
15°	2244	2220	2147	2107	2086	632
25°	2036	1968	1827	1740	1708	937
35°	1755	1646	1458	1324	1276	1098
45°	1434	1291	1067	916	864	1108
55°	1091	924	694	566	525	975
65°	736	564	371	299	292	730
75°	393	243	171	156	154	415
85°	92	47	40	40	40	105
90°	1	11	30	29	30	8
95°	45	54	56	56	54	51
105°	187	190	192	193	193	198
115°	348	353	352	351	348	344
125°	506	514	512	509	508	453
135°	655	665	667	666	663	506
145°	795	802	807	808	804	497
155°	910	912	915	919	916	419
165°	989	988	988	995	990	279
175°	1030	1027	1025	1031	1026	98
180°	1031	1031	1031	1031	1031	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2358.7	2358.7	2358.7	2358.7	2358.7
2.5°	2369.3	2358.7	2335.2	2356.7	2352.4
5°	2358.7	2348.1	2320.3	2339.5	2333.1
7.5°	2339.5	2326.8	2296.9	2305.3	2294.7
10°	2313.9	2299.0	2256.3	2249.8	2237.1
12.5°	2281.9	2262.7	2205.0	2192.3	2168.7
15°	2243.5	2219.9	2147.4	2106.9	2085.6
17.5°	2198.6	2164.5	2074.8	2027.8	1993.6
20°	2147.4	2104.6	1998.0	1944.7	1897.6
22.5°	2092.0	2042.8	1918.9	1846.4	1814.5
25°	2036.5	1968.0	1827.2	1739.8	1707.6
27.5°	1970.3	1897.6	1741.8	1641.5	1592.4
30°	1899.9	1818.6	1647.8	1539.1	1481.4
32.5°	1831.5	1733.2	1558.4	1430.2	1376.7
35°	1754.7	1645.8	1458.1	1323.6	1276.4
37.5°	1680.0	1562.4	1364.1	1216.6	1163.4
40°	1600.9	1473.0	1265.8	1114.3	1058.7
42.5°	1519.9	1383.3	1167.7	1009.6	956.4
45°	1434.5	1291.4	1067.4	915.7	864.5
47.5°	1353.4	1201.9	971.3	819.6	772.7
50°	1263.7	1112.2	877.3	729.9	685.3
52.5°	1176.1	1015.9	787.7	646.8	606.3
55°	1090.7	924.2	693.7	565.7	525.2
57.5°	1003.3	832.5	610.6	491.0	456.8
60°	913.6	742.8	522.9	414.3	380.0
62.5°	826.1	655.4	448.2	345.8	328.8
65°	736.5	563.5	371.4	299.0	292.4
67.5°	651.1	478.1	299.0	262.4	256.2
70°	561.4	394.9	247.5	226.2	217.6
72.5°	476.1	318.0	207.0	190.0	185.7
75°	392.7	243.2	170.7	155.8	153.8
77.5°	309.6	172.8	134.5	125.9	121.6
80°	232.6	123.8	102.4	94.0	94.0
82.5°	162.2	83.3	70.4	66.1	66.1
85°	91.7	46.9	40.5	40.5	40.5
87.5°	34.2	17.0	17.0	14.9	14.9
90°	0.9	11.2	30.5	28.6	29.5
92.5°	19.2	26.1	27.1	28.0	28.0
95°	45.4	54.1	55.7	55.7	54.1
97.5°	75.6	83.6	87.1	87.1	87.1
100°	110.4	117.6	120.0	120.0	119.1
102.5°	147.1	152.4	155.8	156.7	155.8
105°	187.2	189.6	191.5	193.1	193.1
107.5°	227.0	230.7	230.7	231.3	227.0
110°	265.5	270.5	270.5	270.5	268.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	307.2	312.5	311.5	309.1	307.2
115°	348.2	353.3	351.6	350.7	348.2
117.5°	389.0	395.8	391.5	389.0	386.5
120°	430.1	436.8	430.1	430.1	427.2
122.5°	467.3	476.1	471.7	469.2	467.3
125°	506.5	514.3	511.8	509.0	508.1
127.5°	544.8	554.4	551.0	547.2	544.8
130°	580.5	591.7	590.2	588.3	584.9
132.5°	620.6	629.3	630.0	625.6	623.1
135°	655.2	664.8	666.7	665.7	663.2
137.5°	693.7	701.5	703.0	702.4	698.7
140°	727.6	735.4	739.7	739.7	736.3
142.5°	762.5	770.2	772.7	773.6	770.2
145°	795.4	801.6	806.6	807.6	804.1
147.5°	824.9	832.7	836.4	838.0	834.5
150°	855.4	860.7	864.1	866.9	864.1
152.5°	882.5	887.7	892.1	895.5	892.1
155°	909.5	912.0	914.8	919.2	916.3
157.5°	932.9	934.7	936.2	942.5	938.1
160°	953.7	955.5	956.4	961.7	958.0
162.5°	972.9	972.9	973.9	979.7	975.4
165°	989.4	988.5	988.5	994.7	990.3
167.5°	1004.4	1001.5	1001.5	1007.8	1003.4
170°	1015.5	1013.0	1012.1	1018.3	1013.0
172.5°	1023.3	1020.8	1019.9	1026.1	1020.8
175°	1029.6	1027.0	1025.2	1031.4	1026.1
177.5°	1033.0	1030.5	1028.6	1033.9	1028.6
180°	1031.4	1031.4	1031.4	1031.4	1031.4



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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	11.71	12.65	12.55	13.52	14.60	7.68	8.63	8.53	9.49	10.57
	3H	13.39	14.23	14.25	15.11	16.21	8.88	9.72	9.74	10.60	11.70
	4H	13.99	14.79	14.87	15.67	16.79	9.33	10.13	10.21	11.01	12.13
	6H	14.42	15.15	15.30	16.04	17.17	9.65	10.39	10.54	11.27	12.40
	8H	14.54	15.24	15.44	16.15	17.28	9.74	10.44	10.64	11.35	12.48
	12H	14.60	15.27	15.51	16.17	17.32	9.79	10.45	10.69	11.35	12.51
4H	2H	11.74	12.54	12.62	13.42	14.53	8.29	9.09	9.17	9.97	11.08
	3H	13.57	14.23	14.46	15.14	16.28	9.64	10.31	10.54	11.22	12.35
	4H	14.26	14.86	15.16	15.77	16.93	10.19	10.80	11.10	11.70	12.86
	6H	14.77	15.29	15.69	16.23	17.39	10.61	11.13	11.53	12.07	13.23
	8H	14.95	15.43	15.87	16.36	17.53	10.74	11.23	11.66	12.15	13.33
	12H	15.04	15.48	15.98	16.42	17.60	10.81	11.25	11.75	12.19	13.37
8H	4H	14.24	14.72	15.16	15.65	16.82	10.48	10.96	11.40	11.89	13.06
	6H	14.80	15.20	15.74	16.17	17.34	10.99	11.39	11.94	12.36	13.53
	8H	15.01	15.36	15.96	16.32	17.51	11.18	11.54	12.14	12.49	13.68
	12H	15.15	15.46	16.11	16.41	17.65	11.30	11.61	12.26	12.56	13.80
12H	4H	14.19	14.63	15.13	15.57	16.75	10.49	10.92	11.42	11.87	13.05
	6H	14.77	15.13	15.73	16.09	17.28	11.04	11.40	12.00	12.35	13.55
	8H	14.99	15.31	15.95	16.26	17.50	11.25	11.56	12.21	12.52	13.76