

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: P913416

Luminaire Tested: DFN2DIP-HX2F0-060D030US927-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913416
REPORT IS A COMBINATION OF REPORTS P899170 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-060D030US927-RLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

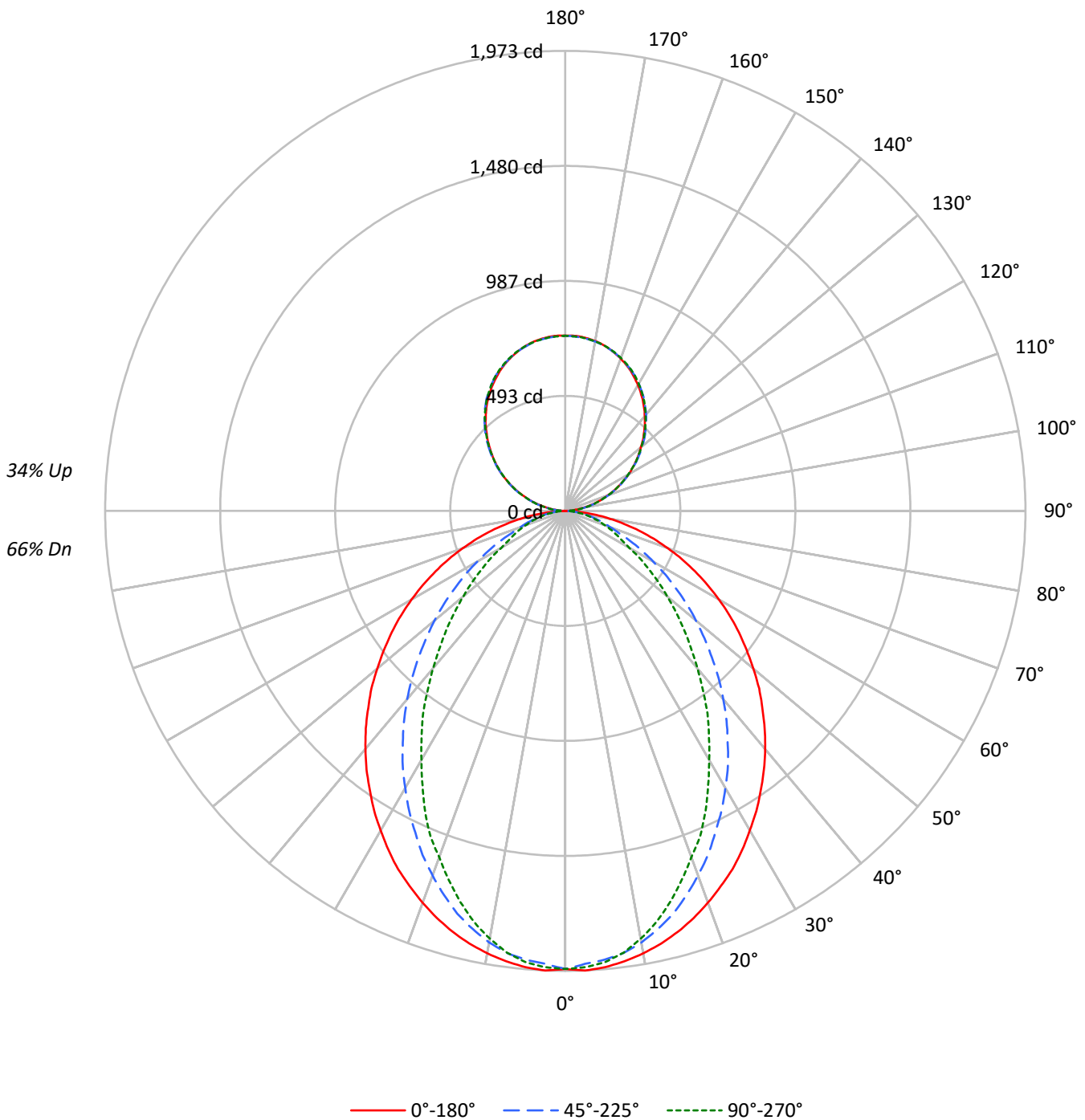
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6143.4 lumens
Efficiency: N/A
Efficacy: 75.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 81.2
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			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	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71	66			66
1	102	98	94	91	96	92	89	86	82	79	77	72	70	69	63	62	61	57			57
2	93	86	80	75	88	81	76	72	72	68	65	64	61	58	57	54	52	49			49
3	86	76	69	63	80	72	66	61	65	59	55	57	53	50	51	48	45	42			42
4	79	68	60	54	74	65	58	52	58	52	48	52	47	44	46	42	40	36			36
5	73	61	53	47	68	58	51	45	52	46	42	47	42	38	42	38	35	32			32
6	67	55	47	41	63	52	45	40	47	41	37	42	38	34	38	34	31	29			29
7	62	50	42	37	59	48	40	35	43	37	33	39	34	30	35	31	28	26			26
8	58	46	38	33	55	44	37	32	40	34	29	36	31	27	32	28	25	23			23
9	54	42	35	29	51	40	33	29	36	31	27	33	28	25	30	26	23	21			21
10	51	39	31	27	48	37	30	26	34	28	24	31	26	23	28	24	21	19			19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4629	4629	4629
5°	4629	4544	4576
10°	4575	4444	4418
15°	4505	4286	4180
20°	4414	4074	3891
25°	4322	3838	3613
30°	4199	3596	3262
35°	4079	3338	2954
40°	3956	3071	2602
45°	3815	2778	2284
50°	3668	2482	1974
55°	3513	2168	1676
60°	3334	1841	1372
65°	3128	1510	1225
70°	2876	1201	1097
75°	2561	1038	982
80°	2108	840	827
85°	1379	518	579

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3815 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.1	3.0
10°-20°	505.4	8.2
20°-30°	709.6	11.6
30°-40°	773.5	12.6
40°-50°	710.9	11.6
50°-60°	558.3	9.1
60°-70°	363.4	5.9
70°-80°	187.1	3.0
80°-90°	49.9	0.8
90°-100°	46.5	0.8
100°-110°	147.8	2.4
110°-120°	252.9	4.1
120°-130°	332.6	5.4
130°-140°	373.3	6.1
140°-150°	366.1	6.0
150°-160°	307.1	5.0
160°-170°	203.7	3.3
170°-180°	71.2	1.2
0°-30°	1399.1	22.8
0°-40°	2172.6	35.4
0°-60°	3441.9	56.0
0°-90°	4042.3	65.8
90°-120°	447.2	7.3
90°-150°	1519.2	24.7
90°-180°	2101.0	34.2
0°-180°	6143.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1964	1964	1964	1964	1964	
5°	1964	1956	1932	1948	1943	186
15°	1868	1849	1788	1755	1737	527
25°	1696	1639	1522	1449	1422	780
35°	1461	1371	1214	1102	1063	915
45°	1195	1076	889	763	720	923
55°	908	770	578	471	437	812
65°	613	469	309	249	244	608
75°	327	203	142	130	128	346
85°	76	39	34	34	34	88
90°	1	8	22	21	22	6
95°	33	40	41	41	40	37
105°	136	138	140	141	141	144
115°	254	257	256	256	254	251
125°	369	375	373	371	370	330
135°	477	484	486	485	483	369
145°	580	584	588	588	586	362
155°	663	665	667	670	668	305
165°	721	720	720	725	722	203
175°	750	748	747	752	748	71
180°	752	752	752	752	752	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1964.5	1964.5	1964.5	1964.5	1964.5
2.5°	1973.3	1964.5	1944.8	1962.7	1959.1
5°	1964.5	1955.6	1932.4	1948.4	1943.1
7.5°	1948.4	1937.8	1913.0	1919.9	1911.1
10°	1927.1	1914.6	1879.2	1873.7	1863.1
12.5°	1900.5	1884.4	1836.4	1825.8	1806.2
15°	1868.4	1848.8	1788.4	1754.7	1736.9
17.5°	1831.1	1802.6	1727.9	1688.9	1660.4
20°	1788.4	1752.8	1664.0	1619.6	1580.4
22.5°	1742.2	1701.3	1598.1	1537.8	1511.2
25°	1696.1	1639.1	1521.8	1449.0	1422.2
27.5°	1641.0	1580.4	1450.6	1367.1	1326.2
30°	1582.3	1514.6	1372.4	1281.8	1233.7
32.5°	1525.3	1443.5	1297.9	1191.1	1146.6
35°	1461.4	1370.7	1214.3	1102.2	1063.0
37.5°	1399.2	1301.2	1136.1	1013.3	968.9
40°	1333.3	1226.8	1054.2	928.0	881.8
42.5°	1265.8	1152.1	972.5	840.8	796.5
45°	1194.7	1075.5	889.0	762.6	719.9
47.5°	1127.2	1001.0	809.0	682.6	643.6
50°	1052.5	926.3	730.7	607.9	570.8
52.5°	979.5	846.1	656.0	538.7	504.9
55°	908.4	769.8	577.7	471.2	437.4
57.5°	835.6	693.3	508.5	408.9	380.4
60°	760.9	618.7	435.5	345.0	316.5
62.5°	688.1	545.9	373.3	288.0	273.9
65°	613.4	469.3	309.3	249.0	243.5
67.5°	542.2	398.2	249.0	218.6	213.3
70°	467.5	328.9	206.1	188.5	181.3
72.5°	396.5	264.8	172.4	158.3	154.6
75°	327.1	202.6	142.2	129.8	128.1
77.5°	257.9	143.9	112.0	104.9	101.3
80°	193.7	103.1	85.2	78.3	78.3
82.5°	135.1	69.4	58.6	55.1	55.1
85°	76.4	39.1	33.7	33.7	33.7
87.5°	28.5	14.2	14.2	12.4	12.4
90°	0.7	8.2	22.2	20.8	21.5
92.5°	14.0	19.0	19.7	20.4	20.4
95°	33.1	39.5	40.6	40.6	39.5
97.5°	55.1	60.9	63.5	63.5	63.5
100°	80.4	85.6	87.5	87.5	86.8
102.5°	107.2	111.1	113.5	114.2	113.5
105°	136.4	138.2	139.6	140.7	140.7
107.5°	165.4	168.1	168.1	168.6	165.4
110°	193.5	197.2	197.2	197.2	195.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	223.9	227.8	227.0	225.2	223.9
115°	253.8	257.4	256.3	255.6	253.8
117.5°	283.4	288.4	285.3	283.4	281.6
120°	313.4	318.4	313.4	313.4	311.3
122.5°	340.6	346.9	343.7	341.9	340.6
125°	369.2	374.8	373.0	370.9	370.3
127.5°	397.0	404.0	401.6	398.8	397.0
130°	423.0	431.2	430.1	428.7	426.2
132.5°	452.3	458.6	459.1	455.9	454.1
135°	477.4	484.4	485.8	485.1	483.3
137.5°	505.5	511.2	512.3	511.9	509.1
140°	530.2	535.9	539.1	539.1	536.5
142.5°	555.6	561.3	563.1	563.8	561.3
145°	579.6	584.2	587.8	588.4	586.0
147.5°	601.2	606.8	609.5	610.7	608.2
150°	623.4	627.2	629.7	631.8	629.7
152.5°	643.1	646.9	650.1	652.6	650.1
155°	662.8	664.6	666.6	669.8	667.8
157.5°	679.8	681.1	682.3	686.8	683.7
160°	695.0	696.3	697.0	700.8	698.1
162.5°	709.0	709.0	709.7	714.0	710.8
165°	721.0	720.3	720.3	724.8	721.7
167.5°	731.9	729.8	729.8	734.4	731.2
170°	740.1	738.2	737.6	742.1	738.2
172.5°	745.7	743.9	743.2	747.7	743.9
175°	750.3	748.5	747.1	751.6	747.7
177.5°	752.7	750.9	749.6	753.4	749.6
180°	751.6	751.6	751.6	751.6	751.6



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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	13.69	14.67	14.51	15.51	16.53	9.68	10.65	10.49	11.49	12.52
	3H	15.36	16.23	16.19	17.07	18.13	10.86	11.73	11.69	12.58	13.64
	4H	15.96	16.78	16.80	17.63	18.70	11.30	12.13	12.15	12.98	14.05
	6H	16.36	17.12	17.22	17.98	19.06	11.62	12.38	12.48	13.24	14.32
	8H	16.48	17.21	17.35	18.08	19.16	11.71	12.43	12.57	13.30	14.39
	12H	16.54	17.23	17.41	18.10	19.20	11.75	12.43	12.62	13.30	14.41
4H	2H	13.73	14.55	14.58	15.40	16.47	10.28	11.10	11.13	11.95	13.02
	3H	15.54	16.22	16.40	17.11	18.19	11.62	12.30	12.48	13.19	14.27
	4H	16.22	16.84	17.09	17.72	18.83	12.16	12.78	13.03	13.66	14.77
	6H	16.72	17.25	17.61	18.16	19.27	12.57	13.11	13.46	14.01	15.12
	8H	16.88	17.38	17.77	18.28	19.41	12.69	13.19	13.58	14.09	15.22
	12H	16.97	17.42	17.88	18.34	19.47	12.75	13.20	13.66	14.12	15.25
8H	4H	16.19	16.69	17.08	17.59	18.72	12.43	12.94	13.33	13.84	14.96
	6H	16.74	17.15	17.66	18.09	19.22	12.94	13.35	13.85	14.29	15.42
	8H	16.94	17.30	17.87	18.24	19.38	13.11	13.48	14.04	14.41	15.56
	12H	17.07	17.39	18.00	18.31	19.51	13.22	13.55	14.16	14.47	15.67
12H	4H	16.15	16.60	17.06	17.52	18.65	12.44	12.89	13.35	13.81	14.94
	6H	16.71	17.08	17.64	18.01	19.16	12.98	13.35	13.91	14.28	15.42
	8H	16.92	17.24	17.85	18.17	19.36	13.18	13.50	14.11	14.43	15.62