

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: P902500

Luminaire Tested: DFN2DIP-HX2F0-060D020US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P902500
REPORT IS A COMBINATION OF REPORTS P899160 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-060D020US830-RLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

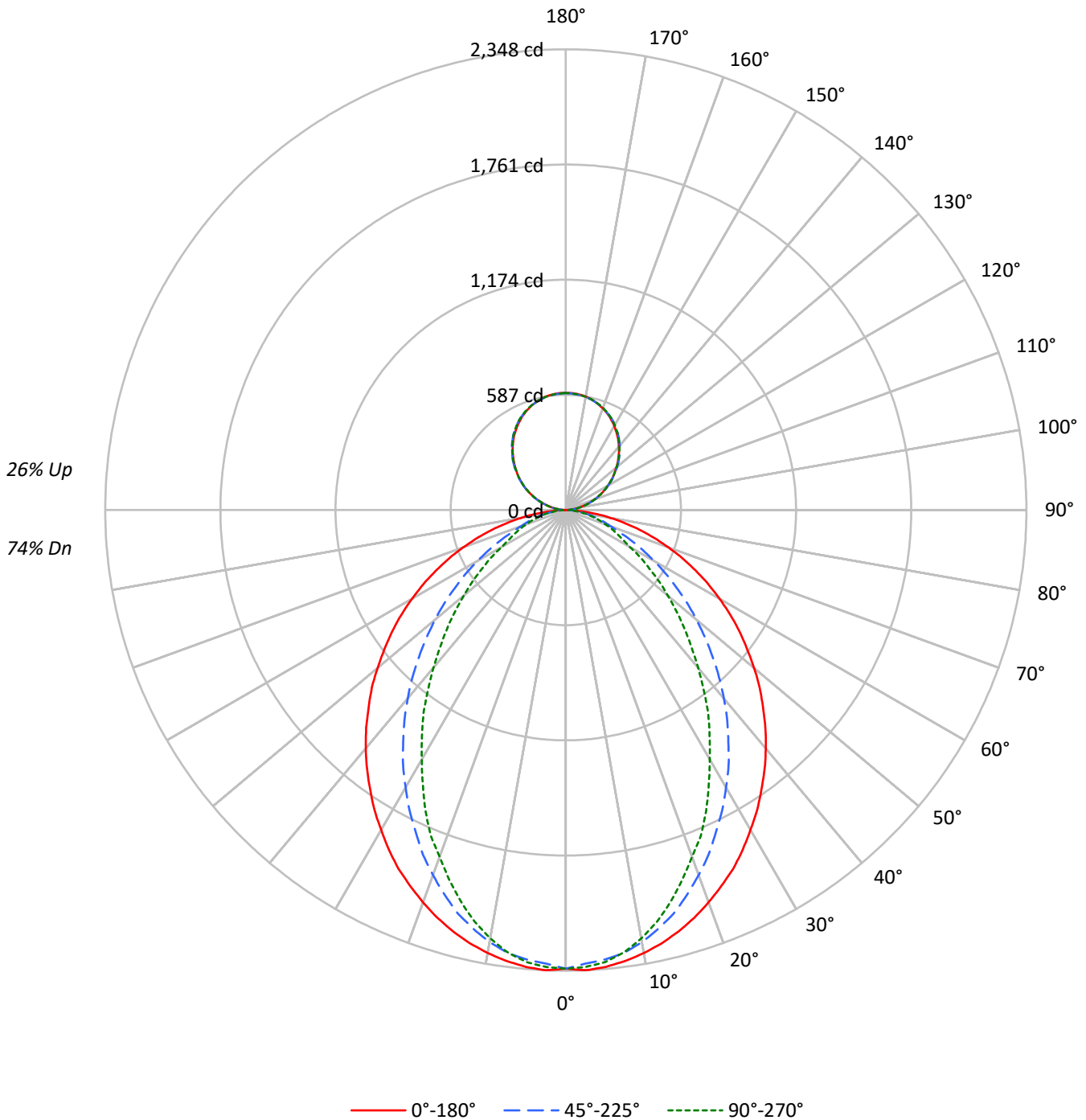
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6475.2 lumens
Efficiency: N/A
Efficacy: 86.7 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): 74.7
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					0					
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0				
RCR																															
0	113	113	113	113	107	107	107	107	97	97	97	87	87	87	78	78	78	74	74	74	74	74	74	74	74	74	74	74	74		
1	104	100	96	93	99	95	92	89	86	84	81	78	76	74	70	69	68	64	64	64	64	64	64	64	64	64	64	64	64		
2	95	88	82	77	90	84	79	74	76	72	68	69	66	63	63	60	58	55	55	55	55	55	55	55	55	55	55	55	55		
3	87	78	71	65	83	75	68	63	68	63	58	62	58	54	56	53	50	47	47	47	47	47	47	47	47	47	47	47	47		
4	80	70	62	56	76	67	60	54	61	55	51	56	51	47	51	47	44	41	41	41	41	41	41	41	41	41	41	41	41		
5	74	63	54	48	70	60	53	47	55	49	44	51	45	42	46	42	39	36	36	36	36	36	36	36	36	36	36	36	36		
6	69	57	48	43	65	54	47	41	50	44	39	46	41	37	42	38	35	32	32	32	32	32	32	32	32	32	32	32	32		
7	64	51	43	38	61	49	42	37	46	39	35	42	37	33	39	34	31	29	29	29	29	29	29	29	29	29	29	29	29		
8	59	47	39	34	57	45	38	33	42	36	31	39	34	30	36	31	28	26	26	26	26	26	26	26	26	26	26	26	26		
9	56	43	36	31	53	42	35	30	39	33	28	36	31	27	33	29	26	24	24	24	24	24	24	24	24	24	24	24	24		
10	52	40	33	28	50	39	32	27	36	30	26	33	28	25	31	27	23	22	22	22	22	22	22	22	22	22	22	22	22		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5507	5507	5507
5°	5507	5406	5444
10°	5444	5288	5257
15°	5360	5100	4974
20°	5252	4847	4630
25°	5142	4566	4298
30°	4996	4279	3881
35°	4853	3971	3514
40°	4707	3654	3096
45°	4539	3305	2718
50°	4364	2953	2349
55°	4180	2579	1995
60°	3967	2190	1632
65°	3721	1797	1458
70°	3423	1429	1306
75°	3048	1235	1168
80°	2508	1000	983
85°	1641	618	690

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4539 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	219.1	3.4
10°-20°	601.3	9.3
20°-30°	844.3	13.0
30°-40°	920.3	14.2
40°-50°	845.9	13.1
50°-60°	664.3	10.3
60°-70°	432.4	6.7
70°-80°	222.6	3.4
80°-90°	58.5	0.9
90°-100°	36.9	0.6
100°-110°	117.2	1.8
110°-120°	200.6	3.1
120°-130°	263.8	4.1
130°-140°	296.1	4.6
140°-150°	290.4	4.5
150°-160°	243.6	3.8
160°-170°	161.5	2.5
170°-180°	56.5	0.9
0°-30°	1664.7	25.7
0°-40°	2585.0	39.9
0°-60°	4095.1	63.2
0°-90°	4808.6	74.3
90°-120°	354.7	5.5
90°-150°	1205.0	18.6
90°-180°	1667.0	25.7
0°-180°	6475.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2337	2337	2337	2337	2337	
5°	2337	2327	2299	2318	2312	222
15°	2223	2200	2128	2088	2067	626
25°	2018	1950	1811	1724	1692	928
35°	1739	1631	1445	1312	1265	1088
45°	1421	1280	1058	907	857	1098
55°	1081	916	687	561	520	966
65°	730	558	368	296	290	724
75°	389	241	169	154	152	412
85°	91	46	40	40	40	104
90°	1	6	18	16	17	6
95°	26	31	32	32	31	29
105°	108	110	111	112	112	114
115°	201	204	203	203	201	199
125°	293	297	296	294	294	262
135°	379	384	385	385	383	293
145°	460	463	466	467	465	287
155°	526	527	529	531	530	242
165°	572	571	571	575	572	161
175°	595	594	593	596	593	57
180°	596	596	596	596	596	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2337.3	2337.3	2337.3	2337.3	2337.3
2.5°	2347.9	2337.3	2313.9	2335.2	2331.0
5°	2337.3	2326.8	2299.1	2318.3	2312.0
7.5°	2318.3	2305.6	2276.1	2284.3	2273.8
10°	2292.8	2278.0	2235.9	2229.4	2216.8
12.5°	2261.3	2242.1	2184.9	2172.4	2149.0
15°	2223.1	2199.7	2127.9	2087.7	2066.6
17.5°	2178.7	2144.8	2055.9	2009.4	1975.6
20°	2127.9	2085.5	1979.8	1927.0	1880.4
22.5°	2072.9	2024.2	1901.5	1829.7	1798.0
25°	2018.0	1950.2	1810.6	1724.0	1692.1
27.5°	1952.5	1880.4	1726.0	1626.5	1577.9
30°	1882.6	1802.0	1632.9	1525.1	1467.9
32.5°	1814.9	1717.5	1544.3	1417.2	1364.2
35°	1738.8	1630.9	1444.8	1311.5	1264.8
37.5°	1664.7	1548.2	1351.7	1205.6	1152.8
40°	1586.4	1459.6	1254.2	1104.1	1049.1
42.5°	1506.1	1370.7	1157.1	1000.4	947.7
45°	1421.4	1279.6	1057.7	907.3	856.6
47.5°	1341.1	1191.0	962.5	812.2	765.7
50°	1252.3	1102.1	869.4	723.3	679.1
52.5°	1165.4	1006.7	780.5	640.9	600.8
55°	1080.8	915.9	687.4	560.6	520.4
57.5°	994.2	824.9	605.0	486.5	452.6
60°	905.3	736.1	518.2	410.5	376.5
62.5°	818.7	649.5	444.1	342.7	325.8
65°	729.8	558.4	368.1	296.2	289.7
67.5°	645.2	473.7	296.2	260.1	253.8
70°	556.3	391.3	245.2	224.2	215.7
72.5°	471.7	315.1	205.1	188.3	184.0
75°	389.2	241.0	169.2	154.4	152.4
77.5°	306.8	171.3	133.3	124.8	120.6
80°	230.5	122.7	101.4	93.1	93.1
82.5°	160.7	82.6	69.7	65.5	65.5
85°	90.9	46.5	40.2	40.2	40.2
87.5°	33.9	16.9	16.9	14.8	14.8
90°	0.6	6.5	17.6	16.5	17.1
92.5°	11.1	15.1	15.6	16.2	16.2
95°	26.2	31.3	32.1	32.1	31.3
97.5°	43.6	48.4	50.3	50.3	50.3
100°	63.8	68.0	69.4	69.4	68.8
102.5°	85.0	88.0	90.0	90.6	90.0
105°	108.2	109.6	110.7	111.6	111.6
107.5°	131.2	133.4	133.4	133.7	131.2
110°	153.5	156.4	156.4	156.4	155.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	177.6	180.6	180.1	178.6	177.6
115°	201.3	204.2	203.3	202.7	201.3
117.5°	224.9	228.8	226.3	224.9	223.4
120°	248.5	252.5	248.5	248.5	246.9
122.5°	270.1	275.1	272.7	271.3	270.1
125°	292.8	297.3	295.9	294.3	293.7
127.5°	314.9	320.5	318.5	316.3	314.9
130°	335.5	342.0	341.1	340.1	338.1
132.5°	358.7	363.8	364.1	361.7	360.1
135°	378.7	384.3	385.3	384.8	383.3
137.5°	401.0	405.5	406.4	406.0	403.9
140°	420.6	425.1	427.6	427.6	425.7
142.5°	440.7	445.2	446.7	447.1	445.2
145°	459.8	463.4	466.3	466.7	464.8
147.5°	476.8	481.4	483.5	484.4	482.4
150°	494.5	497.5	499.5	501.1	499.5
152.5°	510.1	513.1	515.7	517.6	515.7
155°	525.8	527.2	528.8	531.3	529.7
157.5°	539.2	540.3	541.2	544.8	542.2
160°	551.3	552.3	552.9	555.9	553.7
162.5°	562.4	562.4	562.9	566.4	563.8
165°	571.9	571.4	571.4	575.0	572.5
167.5°	580.5	578.9	578.9	582.5	580.0
170°	587.0	585.6	585.0	588.6	585.6
172.5°	591.5	590.0	589.6	593.1	590.0
175°	595.1	593.7	592.6	596.2	593.1
177.5°	597.1	595.7	594.6	597.6	594.6
180°	596.2	596.2	596.2	596.2	596.2



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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	14.96	16.03	15.68	16.77	17.65	10.94	12.02	11.66	12.76	13.63
	3H	16.63	17.59	17.37	18.34	19.25	12.13	13.09	12.87	13.84	14.76
	4H	17.23	18.14	17.99	18.90	19.82	12.58	13.49	13.34	14.25	15.17
	6H	17.64	18.48	18.41	19.25	20.19	12.90	13.74	13.67	14.50	15.44
	8H	17.77	18.56	18.55	19.35	20.29	12.99	13.78	13.77	14.57	15.51
	12H	17.83	18.58	18.61	19.37	20.33	13.03	13.79	13.82	14.57	15.54
4H	2H	15.00	15.91	15.76	16.67	17.59	11.55	12.46	12.31	13.22	14.14
	3H	16.82	17.58	17.60	18.37	19.31	12.90	13.66	13.67	14.45	15.39
	4H	17.51	18.19	18.29	18.98	19.95	13.45	14.13	14.23	14.92	15.89
	6H	18.01	18.60	18.81	19.42	20.40	13.86	14.45	14.66	15.27	16.25
	8H	18.18	18.73	18.98	19.54	20.53	13.98	14.54	14.79	15.35	16.34
	12H	18.27	18.76	19.10	19.60	20.59	14.05	14.55	14.88	15.38	16.38
8H	4H	17.49	18.04	18.30	18.85	19.84	13.73	14.28	14.54	15.10	16.08
	6H	18.04	18.49	18.87	19.35	20.34	14.23	14.69	15.07	15.55	16.54
	8H	18.24	18.64	19.08	19.50	20.50	14.41	14.82	15.26	15.67	16.68
	12H	18.37	18.73	19.22	19.57	20.63	14.53	14.88	15.38	15.73	16.79
12H	4H	17.45	17.94	18.28	18.78	19.77	13.74	14.24	14.57	15.07	16.07
	6H	18.01	18.42	18.86	19.27	20.28	14.28	14.68	15.12	15.54	16.54
	8H	18.22	18.58	19.07	19.43	20.49	14.48	14.84	15.33	15.68	16.75