

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: P928458

Luminaire Tested: DFN2DIP-HX4F0-120D040US927-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P928458
REPORT IS A COMBINATION OF REPORTS P900836 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-120D040US927-RLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

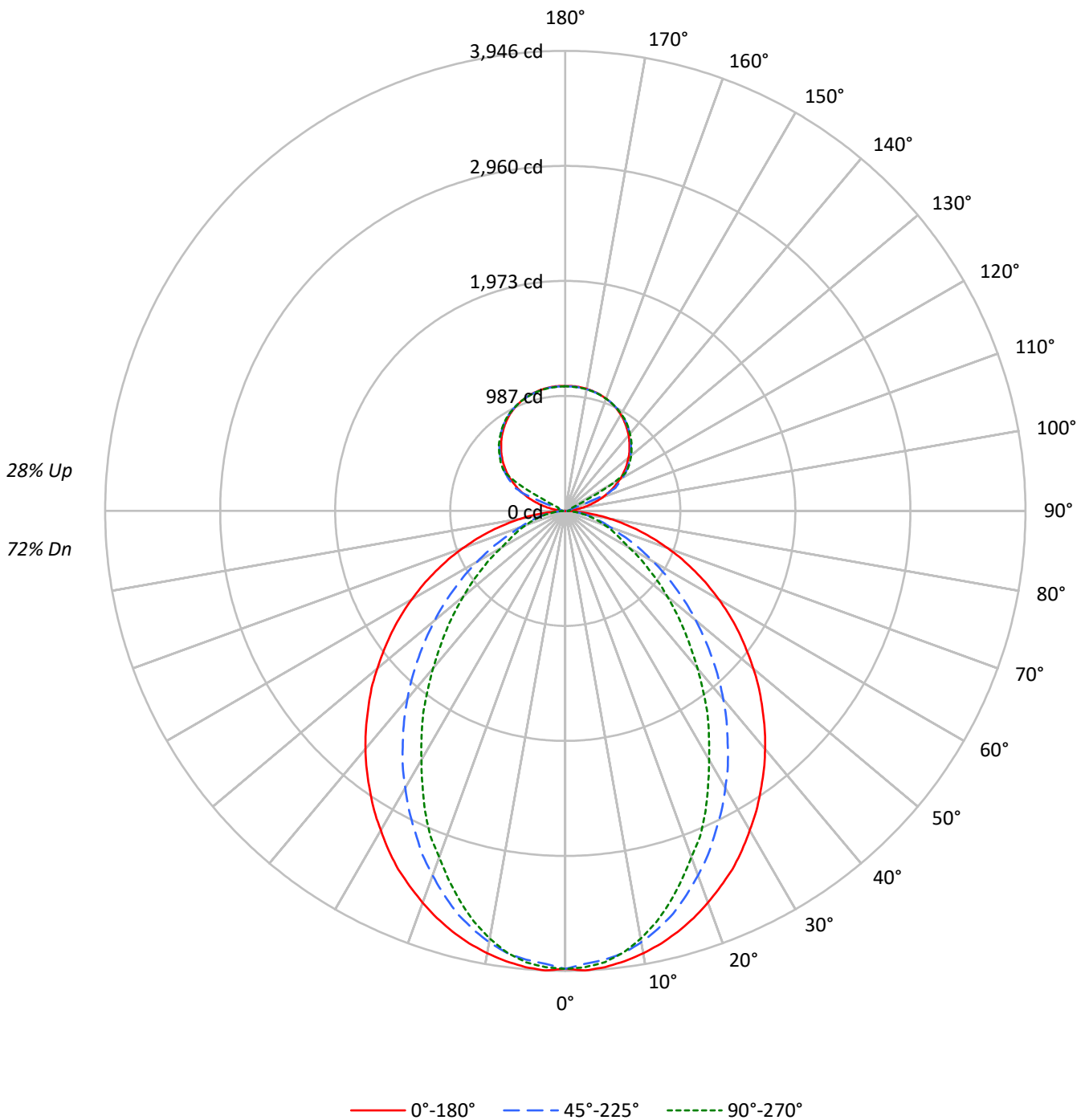
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11214.7 lumens
Efficiency: N/A
Efficacy: 71.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 156.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9954
Total Harmonic Distortion (THDi): 0.076
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	112	112	112	112	107	107	107	107	96	96	96	86	86	86	76	76	76	76	76	76	72
1	103	99	95	92	98	94	91	88	85	82	80	76	75	73	69	67	66	66	66	66	62
2	95	87	81	76	90	83	78	73	75	71	68	68	65	62	61	59	57	57	57	57	53
3	87	78	70	65	82	74	67	62	67	62	58	61	57	53	55	52	49	49	49	49	46
4	80	69	61	55	76	66	59	54	60	54	50	55	50	46	50	46	43	43	43	43	40
5	74	62	54	48	70	59	52	47	54	48	44	50	45	41	45	41	38	38	38	38	35
6	68	56	48	42	65	54	46	41	49	43	39	45	40	36	41	37	34	34	34	34	31
7	63	51	43	38	60	49	42	36	45	39	34	41	36	32	38	34	30	30	30	30	28
8	59	47	39	34	56	45	38	33	41	35	31	38	33	29	35	31	27	27	27	27	25
9	55	43	35	30	52	41	34	30	38	32	28	35	30	26	32	28	25	25	25	25	23
10	52	40	32	28	49	38	31	27	35	29	25	33	28	24	30	26	23	23	23	23	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2921	2921	2921
5°	2926	2875	2893
10°	2897	2819	2799
15°	2857	2726	2654
20°	2805	2598	2475
25°	2751	2454	2303
30°	2679	2306	2084
35°	2608	2148	1892
40°	2536	1984	1672
45°	2452	1802	1472
50°	2365	1618	1277
55°	2275	1422	1090
60°	2171	1216	897
65°	2050	1008	808
70°	1905	813	731
75°	1722	717	666
80°	1457	602	578
85°	1019	404	435

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2452 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	368.1	3.3
10°-20°	1010.6	9.0
20°-30°	1418.9	12.7
30°-40°	1546.6	13.8
40°-50°	1421.5	12.7
50°-60°	1116.4	10.0
60°-70°	726.7	6.5
70°-80°	374.1	3.3
80°-90°	97.4	0.9
90°-100°	35.2	0.3
100°-110°	131.4	1.2
110°-120°	348.6	3.1
120°-130°	578.1	5.2
130°-140°	614.1	5.5
140°-150°	570.7	5.1
150°-160°	458.8	4.1
160°-170°	295.7	2.6
170°-180°	101.8	0.9
0°-30°	2797.6	24.9
0°-40°	4344.2	38.7
0°-60°	6882.2	61.4
0°-90°	8080.3	72.1
90°-120°	515.2	4.6
90°-150°	2278.1	20.3
90°-180°	3134.0	27.9
0°-180°	11214.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3928	3928	3928	3928	3928	
5°	3928	3910	3864	3896	3885	372
15°	3736	3697	3576	3509	3473	1053
25°	3391	3277	3043	2897	2844	1560
35°	2922	2741	2428	2204	2126	1829
45°	2389	2150	1778	1525	1440	1845
55°	1816	1539	1155	942	875	1623
65°	1226	938	619	498	487	1216
75°	654	405	284	260	256	692
85°	153	78	68	68	68	175
90°	1	9	15	19	21	11
95°	50	25	30	34	33	59
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	805	804	601
145°	903	902	915	921	917	565
155°	994	987	996	1001	995	458
165°	1048	1043	1045	1051	1045	296
175°	1071	1066	1068	1073	1065	102
180°	1069	1069	1069	1069	1069	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3928.0	3928.0	3928.0	3928.0	3928.0
2.5°	3945.7	3928.0	3888.8	3924.6	3917.4
5°	3928.0	3910.3	3863.9	3895.9	3885.4
7.5°	3895.9	3874.8	3825.0	3839.0	3821.2
10°	3853.3	3828.4	3757.5	3746.6	3725.5
12.5°	3800.1	3768.1	3671.9	3650.8	3611.6
15°	3736.0	3696.8	3576.1	3508.6	3473.2
17.5°	3661.3	3604.4	3455.0	3377.0	3320.1
20°	3576.1	3504.8	3327.2	3238.6	3160.1
22.5°	3483.7	3401.9	3195.6	3074.9	3021.7
25°	3391.3	3277.4	3042.8	2897.2	2843.7
27.5°	3281.2	3160.1	2900.6	2733.6	2651.7
30°	3163.9	3028.5	2744.1	2563.1	2466.9
32.5°	3050.0	2886.3	2595.1	2381.7	2292.7
35°	2922.2	2740.7	2428.0	2204.1	2125.6
37.5°	2797.7	2602.0	2271.5	2026.0	1937.4
40°	2666.0	2453.0	2107.9	1855.6	1763.2
42.5°	2531.0	2303.6	1944.6	1681.3	1592.7
45°	2388.8	2150.5	1777.5	1524.8	1439.5
47.5°	2253.8	2001.5	1617.6	1364.9	1286.8
50°	2104.5	1852.2	1461.1	1215.6	1141.3
52.5°	1958.5	1691.9	1311.7	1077.1	1009.6
55°	1816.4	1539.2	1155.2	942.1	874.6
57.5°	1670.7	1386.4	1016.8	817.7	760.7
60°	1521.4	1237.0	870.8	689.8	632.9
62.5°	1375.9	1091.5	746.4	575.9	547.6
65°	1226.5	938.4	618.6	497.9	486.9
67.5°	1084.3	796.1	497.9	437.1	426.6
70°	935.0	657.8	412.2	376.8	362.4
72.5°	792.8	529.5	344.7	316.4	309.3
75°	654.0	405.0	284.4	259.5	256.1
77.5°	515.6	287.7	224.1	209.7	202.5
80°	387.4	206.3	170.4	156.5	156.5
82.5°	270.1	138.8	117.3	110.1	110.1
85°	152.8	78.1	67.5	67.5	67.5
87.5°	56.9	28.3	28.3	24.9	24.9
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	39.4	41.8	42.5
100°	136.9	31.0	44.1	50.2	51.8
102.5°	187.9	186.5	45.6	54.1	56.5
105°	235.1	258.4	47.2	55.7	58.8
107.5°	290.1	309.4	48.8	57.3	60.4
110°	342.8	358.9	135.4	58.1	61.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	392.3	406.1	393.0	59.6	61.9
115°	444.8	457.9	477.3	119.1	63.5
117.5°	490.5	505.9	519.2	408.4	205.8
120°	541.6	553.1	567.1	576.4	472.0
122.5°	584.8	597.2	612.8	617.4	618.2
125°	628.9	639.1	653.7	659.2	661.5
127.5°	669.2	680.0	691.7	699.4	700.1
130°	707.1	719.5	727.9	736.5	735.8
132.5°	745.7	755.9	764.4	771.3	770.6
135°	778.3	790.7	797.6	805.4	803.9
137.5°	812.3	821.5	829.4	837.1	834.8
140°	845.5	851.8	860.3	867.2	863.4
142.5°	873.5	878.9	888.9	895.0	891.2
145°	902.9	902.1	915.2	920.6	916.7
147.5°	928.3	926.0	939.2	943.0	940.0
150°	953.1	947.7	960.1	964.7	960.9
152.5°	974.0	967.8	979.4	984.1	978.7
155°	994.1	987.2	996.5	1001.1	994.9
157.5°	1010.4	1004.2	1011.2	1016.6	1010.4
160°	1024.3	1019.6	1024.3	1028.9	1023.5
162.5°	1036.6	1032.1	1035.9	1041.3	1034.4
165°	1047.5	1042.9	1045.2	1050.6	1045.2
167.5°	1056.1	1051.3	1053.8	1059.1	1052.2
170°	1063.0	1058.3	1059.9	1065.3	1058.3
172.5°	1067.6	1063.0	1064.6	1070.0	1063.0
175°	1071.4	1066.0	1067.6	1073.0	1065.3
177.5°	1073.0	1067.6	1068.4	1073.9	1066.9
180°	1069.2	1069.2	1069.2	1069.2	1069.2



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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	12.72	13.77	13.47	14.54	15.46	8.70	9.75	9.45	10.51	11.43
	3H	14.42	15.36	15.18	16.13	17.08	9.90	10.84	10.67	11.62	12.57
	4H	15.04	15.92	15.82	16.71	17.67	10.37	11.25	11.15	12.03	13.00
	6H	15.47	16.29	16.26	17.08	18.06	10.70	11.51	11.49	12.31	13.28
	8H	15.60	16.38	16.41	17.19	18.17	10.80	11.57	11.60	12.38	13.36
	12H	15.67	16.41	16.48	17.22	18.22	10.85	11.59	11.66	12.39	13.40
4H	2H	12.77	13.65	13.55	14.44	15.40	9.32	10.20	10.10	10.99	11.95
	3H	14.62	15.35	15.41	16.17	17.15	10.69	11.43	11.49	12.24	13.22
	4H	15.32	15.99	16.13	16.80	17.81	11.25	11.92	12.06	12.73	13.74
	6H	15.85	16.42	16.68	17.27	18.28	11.68	12.26	12.51	13.10	14.11
	8H	16.03	16.57	16.86	17.40	18.43	11.82	12.35	12.65	13.19	14.22
	12H	16.13	16.62	16.98	17.48	18.51	11.89	12.37	12.74	13.23	14.26
8H	4H	15.30	15.84	16.13	16.68	17.71	11.55	12.08	12.38	12.92	13.95
	6H	15.88	16.32	16.74	17.20	18.23	12.07	12.52	12.93	13.40	14.42
	8H	16.10	16.49	16.97	17.37	18.41	12.27	12.66	13.14	13.54	14.58
	12H	16.25	16.59	17.12	17.46	18.56	12.40	12.74	13.27	13.61	14.71
12H	4H	15.27	15.75	16.12	16.61	17.64	11.56	12.04	12.41	12.90	13.93
	6H	15.86	16.25	16.73	17.13	18.17	12.12	12.52	12.99	13.40	14.44
	8H	16.09	16.43	16.96	17.30	18.40	12.35	12.69	13.22	13.56	14.66