

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: P913392

Luminaire Tested: DFN2DIP-HX2F0-050D020US927-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P913392
REPORT IS A COMBINATION OF REPORTS P899158 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-050D020US927-RLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

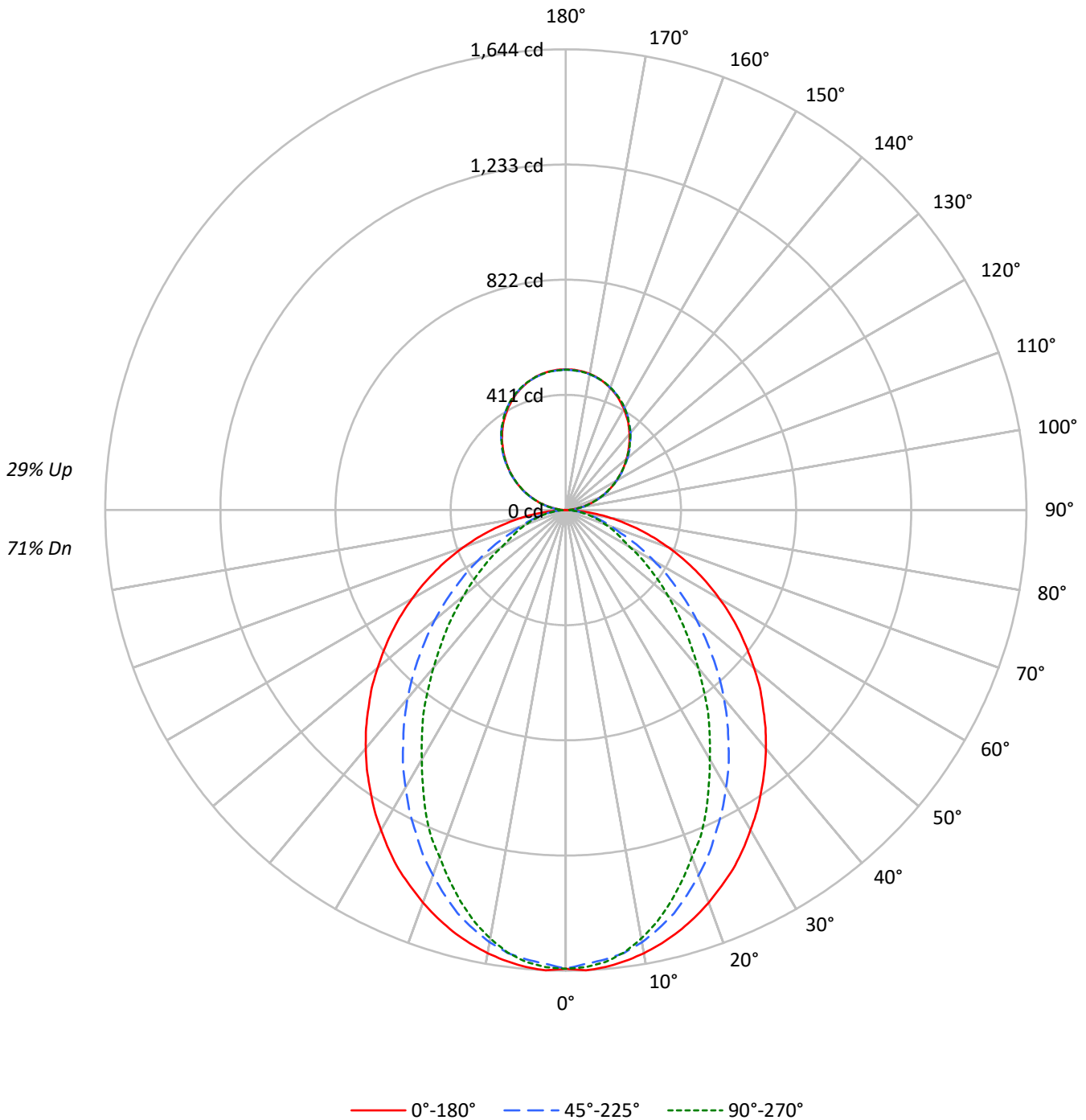
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4768.9 lumens
Efficiency: N/A
Efficacy: 75.9 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): 62.8
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				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	106	106	106	106	95	95	95	85	85	85	75	75	75	75	75	75	71
1	103	99	95	92	97	94	90	88	84	82	79	76	74	72	67	66	65	65	65	65	61
2	94	87	81	76	89	83	78	73	75	71	67	67	64	61	60	58	56	56	56	56	52
3	87	77	70	64	82	74	67	62	67	61	57	60	56	53	54	51	48	48	48	48	45
4	80	69	61	55	75	66	59	53	60	54	49	54	49	46	49	45	42	42	42	42	39
5	74	62	54	48	69	59	52	46	54	48	43	49	44	40	44	40	37	37	37	37	34
6	68	56	48	42	64	54	46	41	49	43	38	44	39	36	40	36	33	33	33	33	31
7	63	51	43	37	60	49	41	36	45	38	34	41	36	32	37	33	30	30	30	30	27
8	59	47	39	33	56	45	37	32	41	35	31	37	32	29	34	30	27	27	27	27	25
9	55	43	35	30	52	41	34	29	38	32	28	35	30	26	32	28	24	24	24	24	22
10	52	39	32	27	49	38	31	27	35	29	25	32	27	24	30	25	22	22	22	22	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3857	3857	3857
5°	3857	3787	3813
10°	3813	3703	3682
15°	3754	3572	3484
20°	3679	3395	3243
25°	3601	3198	3010
30°	3499	2997	2718
35°	3399	2781	2461
40°	3297	2559	2169
45°	3179	2315	1903
50°	3056	2068	1645
55°	2928	1806	1397
60°	2779	1534	1143
65°	2606	1258	1022
70°	2398	1001	915
75°	2135	865	818
80°	1756	701	688
85°	1150	432	482

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3179 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.4	3.2
10°-20°	421.2	8.8
20°-30°	591.3	12.4
30°-40°	644.6	13.5
40°-50°	592.4	12.4
50°-60°	465.3	9.8
60°-70°	302.9	6.4
70°-80°	155.9	3.3
80°-90°	41.2	0.9
90°-100°	31.0	0.7
100°-110°	98.5	2.1
110°-120°	168.6	3.5
120°-130°	221.7	4.6
130°-140°	248.9	5.2
140°-150°	244.1	5.1
150°-160°	204.7	4.3
160°-170°	135.8	2.8
170°-180°	47.5	1.0
0°-30°	1165.9	24.4
0°-40°	1810.5	38.0
0°-60°	2868.2	60.1
0°-90°	3368.2	70.6
90°-120°	298.1	6.3
90°-150°	1012.8	21.2
90°-180°	1401.0	29.4
0°-180°	4768.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1637	1637	1637	1637	1637	
5°	1637	1630	1610	1624	1619	155
15°	1557	1541	1490	1462	1448	439
25°	1413	1366	1268	1207	1185	650
35°	1218	1142	1012	918	886	762
45°	996	896	741	636	600	769
55°	757	641	481	393	364	676
65°	511	391	258	208	203	507
75°	273	169	118	108	107	288
85°	64	33	28	28	28	73
90°	0	6	15	14	14	5
95°	22	26	27	27	26	25
105°	91	92	93	94	94	96
115°	169	172	171	170	169	167
125°	246	250	249	247	247	220
135°	318	323	324	323	322	246
145°	386	389	392	392	391	241
155°	442	443	444	447	445	203
165°	481	480	480	483	481	136
175°	500	499	498	501	498	48
180°	501	501	501	501	501	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1637.0	1637.0	1637.0	1637.0	1637.0
2.5°	1644.4	1637.0	1620.7	1635.6	1632.6
5°	1637.0	1629.7	1610.3	1623.7	1619.3
7.5°	1623.7	1614.9	1594.1	1600.0	1592.5
10°	1605.9	1595.5	1566.0	1561.5	1552.6
12.5°	1583.7	1570.4	1530.3	1521.5	1505.1
15°	1557.0	1540.7	1490.4	1462.3	1447.5
17.5°	1525.9	1502.2	1439.9	1407.4	1383.6
20°	1490.4	1460.7	1386.6	1349.7	1317.0
22.5°	1451.9	1417.8	1331.8	1281.5	1259.3
25°	1413.3	1365.9	1268.1	1207.4	1185.1
27.5°	1367.5	1317.0	1208.9	1139.2	1105.2
30°	1318.6	1262.2	1143.7	1068.2	1028.1
32.5°	1271.1	1202.9	1081.6	992.6	955.5
35°	1217.8	1142.2	1011.9	918.5	885.9
37.5°	1165.9	1084.4	946.7	844.4	807.5
40°	1111.1	1022.3	878.4	773.3	734.8
42.5°	1054.9	960.0	810.4	700.7	663.8
45°	995.6	896.3	740.8	635.5	599.9
47.5°	939.3	834.2	674.1	568.9	536.3
50°	877.1	771.9	608.9	506.6	475.6
52.5°	816.3	705.1	546.7	448.9	420.8
55°	757.0	641.4	481.4	392.6	364.5
57.5°	696.3	577.8	423.7	340.8	317.0
60°	634.1	515.6	362.9	287.5	263.7
62.5°	573.4	454.9	311.1	240.0	228.2
65°	511.1	391.1	257.8	207.5	203.0
67.5°	451.9	331.8	207.5	182.2	177.8
70°	389.7	274.1	171.8	157.0	151.1
72.5°	330.4	220.7	143.7	131.9	128.9
75°	272.6	168.8	118.5	108.1	106.7
77.5°	214.8	119.9	93.4	87.4	84.4
80°	161.4	86.0	71.1	65.2	65.2
82.5°	112.6	57.8	48.9	45.9	45.9
85°	63.7	32.6	28.1	28.1	28.1
87.5°	23.8	11.8	11.8	10.4	10.4
90°	0.5	5.5	14.8	13.9	14.3
92.5°	9.3	12.7	13.2	13.6	13.6
95°	22.0	26.3	27.0	27.0	26.3
97.5°	36.7	40.6	42.3	42.3	42.3
100°	53.6	57.1	58.3	58.3	57.8
102.5°	71.5	74.0	75.7	76.1	75.7
105°	90.9	92.1	93.1	93.8	93.8
107.5°	110.3	112.1	112.1	112.4	110.3
110°	129.0	131.4	131.4	131.4	130.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	149.2	151.8	151.4	150.1	149.2
115°	169.2	171.6	170.9	170.4	169.2
117.5°	189.0	192.3	190.2	189.0	187.7
120°	208.9	212.2	208.9	208.9	207.6
122.5°	227.0	231.2	229.2	228.0	227.0
125°	246.1	249.9	248.7	247.3	246.8
127.5°	264.7	269.3	267.7	265.9	264.7
130°	282.0	287.5	286.7	285.8	284.2
132.5°	301.5	305.8	306.0	304.0	302.7
135°	318.3	323.0	323.8	323.4	322.2
137.5°	337.0	340.8	341.6	341.3	339.4
140°	353.5	357.3	359.4	359.4	357.7
142.5°	370.4	374.1	375.4	375.8	374.1
145°	386.4	389.4	391.9	392.3	390.6
147.5°	400.8	404.6	406.4	407.1	405.4
150°	415.6	418.1	419.8	421.1	419.8
152.5°	428.7	431.3	433.4	435.1	433.4
155°	441.9	443.1	444.4	446.6	445.2
157.5°	453.2	454.1	454.9	457.9	455.7
160°	463.3	464.2	464.7	467.2	465.4
162.5°	472.7	472.7	473.1	476.0	473.9
165°	480.7	480.2	480.2	483.2	481.2
167.5°	487.9	486.6	486.6	489.6	487.5
170°	493.4	492.2	491.7	494.7	492.2
172.5°	497.2	495.9	495.5	498.5	495.9
175°	500.2	499.0	498.0	501.1	498.5
177.5°	501.8	500.7	499.7	502.2	499.7
180°	501.1	501.1	501.1	501.1	501.1



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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	13.44	14.47	14.21	15.26	16.20	9.42	10.46	10.19	11.24	12.18
	3H	15.11	16.03	15.89	16.82	17.80	10.61	11.54	11.39	12.33	13.30
	4H	15.71	16.58	16.51	17.38	18.37	11.06	11.93	11.85	12.73	13.72
	6H	16.12	16.92	16.93	17.73	18.73	11.38	12.18	12.18	12.99	13.99
	8H	16.24	17.00	17.06	17.83	18.83	11.46	12.23	12.28	13.05	14.06
	12H	16.30	17.03	17.12	17.85	18.88	11.51	12.23	12.33	13.05	14.08
4H	2H	13.48	14.35	14.28	15.15	16.14	10.03	10.90	10.83	11.70	12.69
	3H	15.30	16.02	16.11	16.86	17.86	11.38	12.10	12.19	12.94	13.94
	4H	15.98	16.64	16.80	17.47	18.50	11.92	12.58	12.74	13.41	14.44
	6H	16.48	17.05	17.32	17.90	18.94	12.33	12.90	13.17	13.75	14.79
	8H	16.65	17.18	17.49	18.03	19.08	12.45	12.98	13.30	13.84	14.88
	12H	16.74	17.21	17.60	18.09	19.14	12.52	12.99	13.38	13.87	14.92
8H	4H	15.96	16.49	16.80	17.34	18.39	12.20	12.73	13.04	13.58	14.63
	6H	16.50	16.94	17.38	17.84	18.89	12.70	13.14	13.57	14.03	15.08
	8H	16.70	17.09	17.59	17.98	19.05	12.88	13.27	13.76	14.16	15.22
	12H	16.83	17.18	17.72	18.06	19.18	12.99	13.34	13.88	14.22	15.34
12H	4H	15.92	16.39	16.78	17.27	18.32	12.21	12.68	13.07	13.56	14.61
	6H	16.48	16.87	17.36	17.76	18.82	12.74	13.13	13.63	14.02	15.09
	8H	16.69	17.03	17.58	17.91	19.03	12.95	13.29	13.83	14.17	15.29