

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: P904321

Luminaire Tested: DFN2DIP-TR2F0-050D020US830-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904321
REPORT IS A COMBINATION OF REPORTS P901747 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-050D020US830-FLLONL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

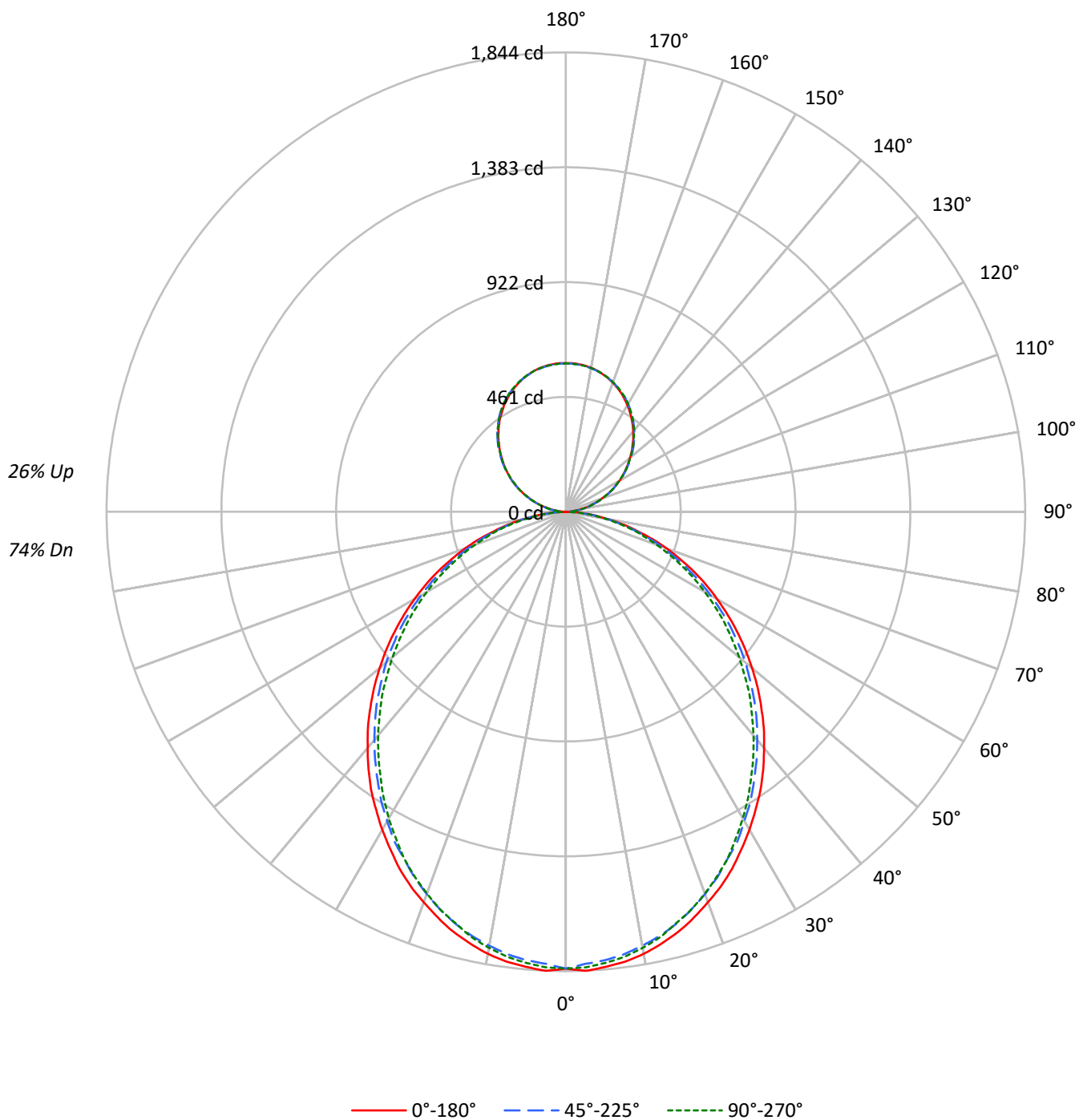
Lumens per Lamp: N/A
Luminaire Lumens: 6333.9 lumens
Efficiency: N/A
Efficacy: 100.9 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 62.8
Input Voltage (V): 120
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
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	113	113	113	113	107	107	107	107	96	96	96		87	87	87		78
1	103	99	95	91	98	94	90	87	85	82	80		77	74	72		69
2	94	86	80	74	89	82	76	71	74	70	66		67	64	61		61
3	86	76	68	62	81	72	65	60	66	60	55		59	55	51		54
4	79	67	59	53	74	64	57	51	58	52	47		53	48	44		48
5	72	60	52	45	68	57	50	44	52	46	41		48	42	38		43
6	67	54	46	40	63	52	44	38	47	41	36		43	38	34		39
7	62	49	41	35	58	47	39	34	43	37	32		39	34	30		36
8	57	45	37	31	54	43	35	30	39	33	28		36	31	27		33
9	54	41	33	28	51	39	32	27	36	30	26		33	28	24		31
10	50	38	30	25	48	36	29	24	33	27	23		31	26	22		28

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4090	4090	4090
5°	4090	4024	4053
10°	4051	3961	3991
15°	3986	3886	3898
20°	3899	3787	3804
25°	3813	3669	3696
30°	3706	3560	3560
35°	3604	3431	3417
40°	3481	3302	3280
45°	3357	3171	3139
50°	3221	3034	2977
55°	3078	2875	2827
60°	2916	2689	2655
65°	2739	2493	2451
70°	2514	2256	2230
75°	2203	1971	2018
80°	1827	1608	1631
85°	1245	1013	1013

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3357 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	172.6	2.7
10°-20°	485.6	7.7
20°-30°	713.7	11.3
30°-40°	828.9	13.1
40°-50°	827.8	13.1
50°-60°	721.8	11.4
60°-70°	533.6	8.4
70°-80°	301.9	4.8
80°-90°	81.4	1.3
90°-100°	36.9	0.6
100°-110°	117.2	1.9
110°-120°	200.6	3.2
120°-130°	263.8	4.2
130°-140°	296.1	4.7
140°-150°	290.4	4.6
150°-160°	243.6	3.8
160°-170°	161.5	2.6
170°-180°	56.5	0.9
0°-30°	1371.9	21.7
0°-40°	2200.7	34.7
0°-60°	3750.4	59.2
0°-90°	4667.3	73.7
90°-120°	354.7	5.6
90°-150°	1205.0	19.0
90°-180°	1667.0	26.3
0°-180°	6333.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1834	1834	1834	1834	1834	
5°	1834	1827	1807	1821	1818	174
15°	1746	1735	1712	1719	1710	492
25°	1580	1566	1536	1539	1536	727
35°	1363	1346	1317	1307	1298	851
45°	1109	1097	1070	1051	1044	856
55°	839	829	808	786	778	750
65°	566	555	538	522	513	560
75°	296	293	284	273	277	316
85°	72	70	69	63	62	81
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°	1833.7	1833.7	1833.7	1833.7	1833.7
2.5°	1844.4	1835.6	1816.2	1833.7	1830.4
5°	1833.7	1826.8	1807.3	1821.4	1818.1
7.5°	1821.4	1810.9	1791.5	1805.7	1802.1
10°	1802.1	1789.8	1768.7	1782.6	1777.4
12.5°	1775.6	1765.1	1744.0	1752.8	1749.2
15°	1745.6	1735.1	1712.1	1719.3	1710.4
17.5°	1708.5	1698.1	1675.1	1683.9	1675.1
20°	1668.0	1657.6	1632.9	1638.0	1631.2
22.5°	1627.6	1611.7	1588.7	1588.7	1585.1
25°	1579.9	1565.8	1535.9	1539.3	1535.9
27.5°	1526.9	1514.6	1491.8	1486.5	1477.7
30°	1474.1	1460.0	1433.6	1428.3	1421.3
32.5°	1417.7	1407.2	1378.9	1368.3	1361.2
35°	1363.0	1345.5	1317.2	1306.6	1297.8
37.5°	1301.3	1285.4	1257.2	1244.8	1236.0
40°	1237.9	1223.7	1195.4	1179.7	1172.6
42.5°	1176.2	1162.0	1133.9	1116.1	1105.6
45°	1109.2	1096.8	1070.3	1051.0	1043.9
47.5°	1043.9	1031.5	1003.3	983.8	973.4
50°	975.1	966.3	941.6	916.9	908.0
52.5°	908.0	895.7	872.9	853.5	841.1
55°	839.4	828.8	807.6	786.5	777.7
57.5°	770.5	761.8	738.8	717.7	710.5
60°	701.7	694.8	670.1	650.6	645.5
62.5°	634.8	622.5	604.8	587.2	580.1
65°	566.1	555.4	537.8	522.0	513.1
67.5°	495.6	486.6	470.9	458.5	451.4
70°	430.3	423.2	407.3	394.9	388.0
72.5°	363.4	356.2	347.4	335.1	329.8
75°	296.1	292.8	283.8	273.3	276.9
77.5°	236.3	229.1	225.6	220.4	215.2
80°	176.4	174.6	171.0	165.8	162.2
82.5°	119.9	119.9	118.2	111.1	111.1
85°	72.2	70.5	68.8	63.4	61.7
87.5°	31.8	28.3	24.7	19.4	17.6
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	13.99	15.11	14.71	15.85	16.74	13.56	14.69	14.29	15.43	16.32
	3H	15.64	16.65	16.38	17.40	18.32	15.18	16.19	15.92	16.94	17.86
	4H	16.22	17.18	16.98	17.94	18.87	15.76	16.72	16.52	17.48	18.41
	6H	16.62	17.50	17.39	18.27	19.22	16.16	17.04	16.93	17.81	18.76
	8H	16.72	17.56	17.50	18.35	19.30	16.26	17.10	17.04	17.89	18.84
	12H	16.77	17.57	17.55	18.36	19.33	16.31	17.11	17.09	17.89	18.87
4H	2H	14.47	15.42	15.23	16.18	17.12	14.13	15.08	14.89	15.85	16.78
	3H	16.33	17.13	17.10	17.93	18.87	15.95	16.74	16.72	17.54	18.49
	4H	17.04	17.76	17.82	18.56	19.54	16.64	17.37	17.43	18.16	19.14
	6H	17.54	18.17	18.35	18.99	19.98	17.15	17.78	17.95	18.60	19.58
	8H	17.69	18.27	18.50	19.09	20.09	17.29	17.88	18.10	18.70	19.69
	12H	17.76	18.29	18.59	19.13	20.13	17.36	17.89	18.19	18.73	19.73
8H	4H	17.24	17.83	18.05	18.65	19.64	16.89	17.48	17.70	18.30	19.29
	6H	17.86	18.34	18.69	19.21	20.20	17.51	17.99	18.34	18.85	19.85
	8H	18.07	18.50	18.91	19.36	20.37	17.71	18.14	18.56	19.00	20.01
	12H	18.19	18.57	19.04	19.42	20.49	17.82	18.21	18.67	19.05	20.12
12H	4H	17.24	17.77	18.07	18.61	19.61	16.90	17.42	17.72	18.26	19.26
	6H	17.89	18.32	18.73	19.18	20.19	17.54	17.98	18.39	18.83	19.85
	8H	18.12	18.50	18.97	19.35	20.42	17.78	18.16	18.63	19.01	20.08