

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: P907000

Luminaire Tested: DFN2DIP-TR2F0-020D050US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907000
REPORT IS A COMBINATION OF REPORTS P900251 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-020D050US835-FLLFLL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

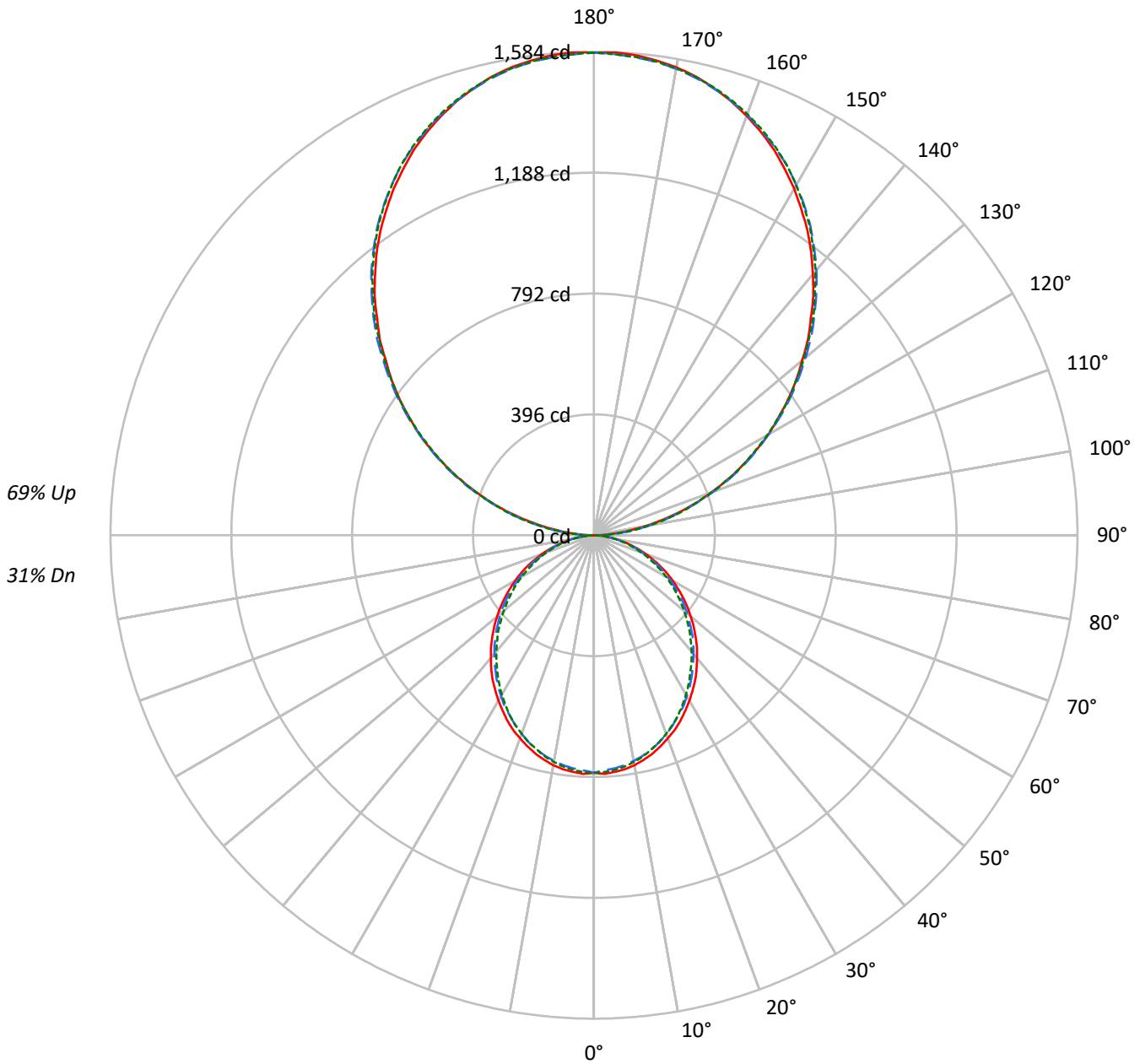
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6405.0 lumens
Efficiency: N/A
Efficacy: 119.3 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-Indirect

Input Watts (W): 53.7
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.9968
Total Harmonic Distortion (THDi): 0.064
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



— 0°-180° - - - 45°-225° - - - - 90°-270°



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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	103	103	103	103	92	92	92	92	73	73	73	55	55	55	39	39	39	39	39	39	31
1	94	89	86	82	84	80	77	74	64	61	60	48	47	46	34	33	33	34	33	33	26
2	85	78	72	67	76	70	65	61	56	52	49	42	40	38	30	29	27	30	29	27	22
3	78	68	61	56	69	62	56	51	49	45	41	37	35	32	27	25	23	27	25	23	18
4	71	60	53	47	63	55	48	43	44	39	35	33	30	28	24	22	20	24	22	20	16
5	65	54	46	40	58	49	42	37	39	34	30	30	26	24	21	19	17	21	19	17	14
6	60	48	40	35	54	44	37	32	35	30	26	27	23	21	19	17	15	19	17	15	12
7	55	43	36	30	49	39	33	28	32	27	23	24	21	18	18	15	14	18	15	14	11
8	51	39	32	27	46	36	29	24	29	24	20	22	19	16	16	14	12	16	14	12	10
9	47	36	28	24	43	32	26	22	26	21	18	20	17	15	15	13	11	15	13	11	9
10	44	33	26	21	40	30	24	19	24	19	16	19	15	13	14	12	10	14	12	10	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1736	1736	1736
5°	1736	1708	1720
10°	1719	1681	1694
15°	1691	1649	1654
20°	1655	1607	1614
25°	1618	1557	1568
30°	1573	1511	1511
35°	1530	1456	1450
40°	1477	1401	1392
45°	1424	1346	1332
50°	1367	1288	1264
55°	1306	1220	1199
60°	1238	1141	1126
65°	1162	1058	1040
70°	1067	957	947
75°	935	836	856
80°	776	683	692
85°	528	430	430

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 90°
 Luminance: 2065 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.2	1.1
10°-20°	206.1	3.2
20°-30°	302.9	4.7
30°-40°	351.8	5.5
40°-50°	351.3	5.5
50°-60°	306.3	4.8
60°-70°	226.5	3.5
70°-80°	128.1	2.0
80°-90°	38.3	0.6
90°-100°	97.8	1.5
100°-110°	310.9	4.9
110°-120°	532.1	8.3
120°-130°	699.7	10.9
130°-140°	785.4	12.3
140°-150°	770.2	12.0
150°-160°	646.1	10.1
160°-170°	428.5	6.7
170°-180°	149.8	2.3
0°-30°	582.2	9.1
0°-40°	934.0	14.6
0°-60°	1591.6	24.8
0°-90°	1984.5	31.0
90°-120°	940.8	14.7
90°-150°	3196.2	49.9
90°-180°	4421.0	69.0
0°-180°	6405.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	778	778	778	778	778	
5°	778	775	767	773	772	74
15°	741	736	727	730	726	209
25°	670	664	652	653	652	309
35°	578	571	559	554	551	361
45°	471	466	454	446	443	363
55°	356	352	343	334	330	318
65°	240	236	228	222	218	238
75°	126	124	120	116	118	134
85°	31	30	29	27	26	34
90°	1	17	47	44	45	6
95°	70	83	85	85	83	77
105°	287	291	294	296	296	303
115°	534	542	539	538	534	528
125°	777	788	785	780	779	694
135°	1004	1019	1022	1021	1017	776
145°	1220	1229	1237	1238	1233	762
155°	1394	1398	1402	1409	1405	642
165°	1517	1516	1516	1525	1518	428
175°	1578	1575	1572	1581	1573	150
180°	1581	1581	1581	1581	1581	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	778.2	778.2	778.2	778.2	778.2
2.5°	782.7	779.0	770.7	778.2	776.8
5°	778.2	775.3	767.0	773.0	771.5
7.5°	773.0	768.5	760.3	766.3	764.8
10°	764.8	759.6	750.6	756.5	754.3
12.5°	753.5	749.1	740.1	743.8	742.3
15°	740.8	736.4	726.6	729.6	725.9
17.5°	725.1	720.7	710.9	714.6	710.9
20°	707.9	703.4	692.9	695.2	692.2
22.5°	690.7	684.0	674.2	674.2	672.7
25°	670.5	664.5	651.8	653.2	651.8
27.5°	648.0	642.8	633.1	630.9	627.1
30°	625.6	619.6	608.4	606.2	603.1
32.5°	601.6	597.2	585.2	580.7	577.7
35°	578.5	571.0	559.0	554.5	550.7
37.5°	552.3	545.5	533.5	528.3	524.5
40°	525.3	519.3	507.3	500.7	497.6
42.5°	499.1	493.1	481.2	473.7	469.2
45°	470.7	465.5	454.2	446.0	443.0
47.5°	443.0	437.8	425.8	417.5	413.1
50°	413.8	410.1	399.6	389.1	385.4
52.5°	385.4	380.1	370.4	362.2	357.0
55°	356.2	351.7	342.7	333.8	330.0
57.5°	327.0	323.3	313.5	304.6	301.5
60°	297.8	294.9	284.4	276.1	273.9
62.5°	269.4	264.1	256.7	249.2	246.2
65°	240.2	235.7	228.3	221.5	217.8
67.5°	210.3	206.5	199.8	194.6	191.6
70°	182.6	179.6	172.8	167.6	164.7
72.5°	154.2	151.2	147.4	142.2	140.0
75°	125.7	124.3	120.4	116.0	117.5
77.5°	100.3	97.3	95.7	93.5	91.3
80°	74.9	74.1	72.6	70.3	68.8
82.5°	50.9	50.9	50.2	47.2	47.2
85°	30.6	29.9	29.2	26.9	26.2
87.5°	13.5	12.0	10.5	8.3	7.5
90°	1.4	17.2	46.7	43.9	45.3
92.5°	29.6	40.0	41.5	42.9	42.9
95°	69.6	83.0	85.3	85.3	83.0
97.5°	115.8	128.2	133.5	133.5	133.5
100°	169.2	180.2	184.0	184.0	182.6
102.5°	225.5	233.6	238.8	240.3	238.8
105°	287.0	290.8	293.7	296.0	296.0
107.5°	348.0	353.7	353.7	354.7	348.0
110°	407.1	414.8	414.8	414.8	410.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	471.0	479.1	477.7	473.9	471.0
115°	533.9	541.6	539.2	537.8	533.9
117.5°	596.4	606.9	600.2	596.4	592.6
120°	659.3	669.8	659.3	659.3	655.0
122.5°	716.5	729.9	723.2	719.4	716.5
125°	776.6	788.5	784.7	780.4	779.0
127.5°	835.2	850.0	844.8	839.0	835.2
130°	890.1	907.2	904.8	902.0	896.7
132.5°	951.6	964.9	965.9	959.2	955.4
135°	1004.5	1019.2	1022.1	1020.7	1016.9
137.5°	1063.6	1075.5	1077.9	1076.9	1071.2
140°	1115.5	1127.5	1134.1	1134.1	1128.9
142.5°	1168.9	1180.9	1184.7	1186.1	1180.9
145°	1219.5	1229.0	1236.6	1238.1	1232.8
147.5°	1264.8	1276.7	1282.4	1284.8	1279.5
150°	1311.5	1319.6	1324.8	1329.1	1324.8
152.5°	1353.0	1361.1	1367.7	1373.0	1367.7
155°	1394.4	1398.2	1402.5	1409.2	1404.9
157.5°	1430.2	1433.0	1435.4	1445.0	1438.3
160°	1462.1	1465.0	1466.4	1474.5	1468.8
162.5°	1491.7	1491.7	1493.1	1502.2	1495.5
165°	1517.0	1515.5	1515.5	1525.1	1518.4
167.5°	1539.8	1535.5	1535.5	1545.1	1538.4
170°	1557.0	1553.2	1551.8	1561.3	1553.2
172.5°	1568.9	1565.1	1563.7	1573.2	1565.1
175°	1578.5	1574.6	1571.8	1581.3	1573.2
177.5°	1583.7	1579.9	1577.0	1585.1	1577.0
180°	1581.3	1581.3	1581.3	1581.3	1581.3



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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	6.98	7.69	8.08	8.79	10.31	6.55	7.27	7.66	8.37	9.89
	3H	8.60	9.24	9.71	10.35	11.88	8.14	8.78	9.25	9.89	11.42
	4H	9.17	9.77	10.29	10.88	12.42	8.71	9.31	9.83	10.42	11.96
	6H	9.54	10.10	10.67	11.21	12.76	9.08	9.64	10.21	10.75	12.30
	8H	9.63	10.16	10.77	11.29	12.84	9.17	9.70	10.31	10.83	12.38
	12H	9.67	10.17	10.80	11.29	12.86	9.20	9.71	10.34	10.83	12.40
4H	2H	7.41	8.02	8.54	9.13	10.67	7.07	7.68	8.20	8.79	10.33
	3H	9.23	9.74	10.37	10.88	12.43	8.85	9.36	9.99	10.49	12.05
	4H	9.92	10.39	11.06	11.51	13.09	9.53	9.99	10.67	11.12	12.69
	6H	10.41	10.81	11.55	11.96	13.52	10.01	10.41	11.16	11.56	13.12
	8H	10.54	10.92	11.69	12.06	13.64	10.14	10.52	11.29	11.66	13.24
	12H	10.60	10.94	11.76	12.09	13.67	10.19	10.53	11.35	11.68	13.27
8H	4H	10.10	10.47	11.24	11.61	13.19	9.75	10.12	10.89	11.26	12.84
	6H	10.70	11.00	11.86	12.19	13.76	10.34	10.65	11.51	11.83	13.41
	8H	10.90	11.17	12.07	12.33	13.93	10.54	10.81	11.71	11.97	13.57
	12H	11.01	11.24	12.18	12.40	14.03	10.64	10.87	11.81	12.03	13.66
12H	4H	10.07	10.41	11.24	11.56	13.15	9.73	10.07	10.89	11.22	12.81
	6H	10.72	10.99	11.89	12.15	13.75	10.38	10.65	11.55	11.81	13.41
	8H	10.94	11.17	12.11	12.33	13.96	10.59	10.83	11.77	11.98	13.62