

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: P912465

Luminaire Tested: DFN2DIP-TR2F0-030D020US850-FLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P912465
REPORT IS A COMBINATION OF REPORTS P901743 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-030D020US850-FLLONL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

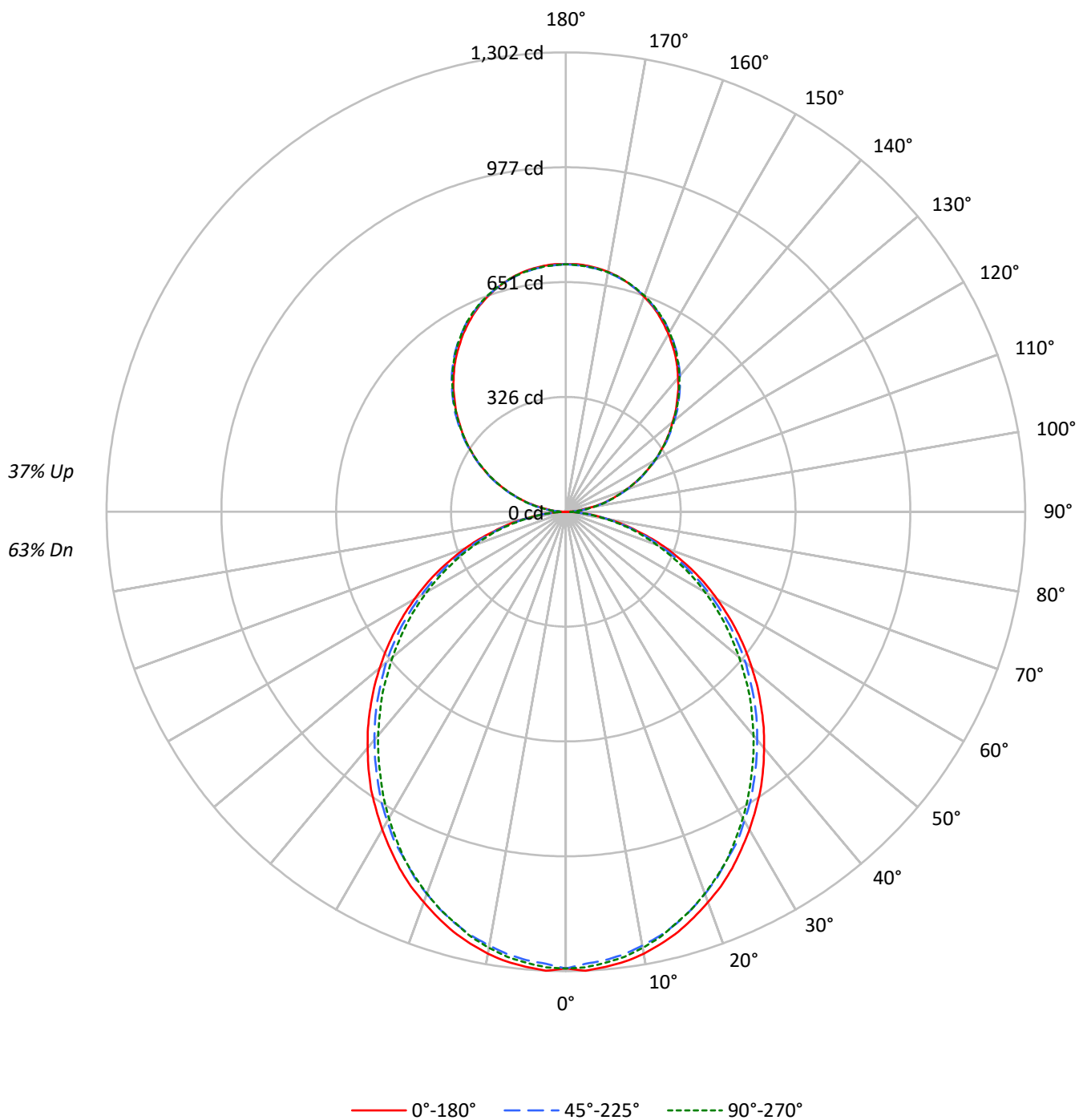
Lumens per Lamp: N/A
Luminaire Lumens: 5256.7 lumens
Efficiency: N/A
Efficacy: 129.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 40.5
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9951
Total Harmonic Distortion (THDi): 0.07
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	30	10
RCR																					
0	110	110	110	110		103	103	103	103		90	90	90		79	79	79		68	68	68
1	101	96	92	89		94	90	87	84		79	77	74		69	67	66		60	59	57
2	92	84	78	72		86	79	73	69		70	65	62		61	58	55		53	50	48
3	84	74	66	60		78	70	63	58		61	56	52		54	50	46		47	44	41
4	77	66	57	51		71	62	54	49		55	49	44		48	43	40		42	38	35
5	70	58	50	44		66	55	48	42		49	43	38		43	38	35		38	34	31
6	65	53	44	38		61	50	42	37		44	38	33		39	34	30		34	30	27
7	60	48	39	34		56	45	38	32		40	34	30		36	31	27		31	27	24
8	56	43	35	30		52	41	34	29		37	31	26		33	28	24		29	25	22
9	52	40	32	27		49	38	30	26		34	28	24		30	25	22		27	23	20
10	49	36	29	24		46	35	28	23		31	25	21		28	23	20		25	21	18

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2887	2887	2887
5°	2888	2841	2861
10°	2860	2796	2818
15°	2814	2744	2752
20°	2752	2673	2685
25°	2692	2591	2609
30°	2616	2513	2513
35°	2545	2422	2412
40°	2457	2331	2315
45°	2370	2239	2216
50°	2274	2142	2102
55°	2173	2030	1996
60°	2059	1898	1874
65°	1934	1760	1731
70°	1775	1593	1575
75°	1555	1392	1425
80°	1289	1135	1152
85°	879	716	716

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2370 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	121.8	2.3
10°-20°	342.8	6.5
20°-30°	503.8	9.6
30°-40°	585.2	11.1
40°-50°	584.4	11.1
50°-60°	509.6	9.7
60°-70°	376.7	7.2
70°-80°	213.1	4.1
80°-90°	58.2	1.1
90°-100°	43.4	0.8
100°-110°	137.9	2.6
110°-120°	236.0	4.5
120°-130°	310.4	5.9
130°-140°	348.4	6.6
140°-150°	341.7	6.5
150°-160°	286.6	5.5
160°-170°	190.1	3.6
170°-180°	66.4	1.3
0°-30°	968.5	18.4
0°-40°	1553.6	29.6
0°-60°	2647.7	50.4
0°-90°	3295.8	62.7
90°-120°	417.3	7.9
90°-150°	1417.8	27.0
90°-180°	1961.0	37.3
0°-180°	5256.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1294	1294	1294	1294	1294	
5°	1294	1290	1276	1286	1283	123
15°	1232	1225	1209	1214	1208	347
25°	1115	1106	1084	1087	1084	513
35°	962	950	930	922	916	601
45°	783	774	756	742	737	604
55°	593	585	570	555	549	530
65°	400	392	380	368	362	395
75°	209	207	200	193	196	223
85°	51	50	49	45	44	57
90°	1	8	21	19	20	5
95°	31	37	38	38	37	34
105°	127	129	130	131	131	134
115°	237	240	239	238	237	234
125°	344	350	348	346	346	308
135°	446	452	453	453	451	344
145°	541	545	549	549	547	338
155°	619	620	622	625	623	285
165°	673	672	672	676	674	190
175°	700	699	697	701	698	67
180°	701	701	701	701	701	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1294.5	1294.5	1294.5	1294.5	1294.5
2.5°	1302.1	1295.9	1282.1	1294.5	1292.2
5°	1294.5	1289.7	1275.9	1285.9	1283.4
7.5°	1285.9	1278.5	1264.7	1274.8	1272.2
10°	1272.2	1263.5	1248.6	1258.5	1254.8
12.5°	1253.5	1246.1	1231.2	1237.3	1234.9
15°	1232.3	1225.0	1208.7	1213.7	1207.5
17.5°	1206.1	1198.8	1182.5	1188.7	1182.5
20°	1177.5	1170.1	1152.7	1156.4	1151.5
22.5°	1149.0	1137.8	1121.5	1121.5	1119.0
25°	1115.3	1105.5	1084.3	1086.7	1084.3
27.5°	1077.9	1069.2	1053.1	1049.4	1043.2
30°	1040.7	1030.7	1012.1	1008.3	1003.3
32.5°	1000.9	993.4	973.5	965.9	960.9
35°	962.3	949.9	929.9	922.4	916.1
37.5°	918.7	907.5	887.5	878.8	872.6
40°	873.9	863.9	843.9	832.9	827.9
42.5°	830.3	820.3	800.5	787.9	780.5
45°	783.1	774.3	755.6	741.9	736.9
47.5°	736.9	728.3	708.3	694.6	687.1
50°	688.4	682.1	664.7	647.3	641.1
52.5°	641.1	632.4	616.3	602.5	593.8
55°	592.6	585.1	570.1	555.3	549.1
57.5°	544.0	537.8	521.6	506.6	501.6
60°	495.4	490.5	473.1	459.3	455.7
62.5°	448.1	439.4	427.0	414.5	409.6
65°	399.7	392.1	379.7	368.5	362.3
67.5°	349.9	343.6	332.4	323.7	318.7
70°	303.8	298.8	287.6	278.8	273.9
72.5°	256.5	251.4	245.2	236.5	232.9
75°	209.0	206.7	200.4	193.0	195.5
77.5°	166.8	161.8	159.3	155.6	151.9
80°	124.5	123.2	120.7	117.0	114.6
82.5°	84.6	84.6	83.5	78.4	78.4
85°	51.0	49.8	48.6	44.8	43.6
87.5°	22.4	20.0	17.4	13.8	12.4
90°	0.7	7.7	20.7	19.4	20.1
92.5°	13.1	17.7	18.4	19.1	19.1
95°	30.8	36.8	37.8	37.8	36.8
97.5°	51.3	56.9	59.2	59.2	59.2
100°	75.1	80.0	81.6	81.6	81.0
102.5°	100.0	103.6	105.9	106.6	105.9
105°	127.3	129.0	130.3	131.3	131.3
107.5°	154.4	156.9	156.9	157.4	154.4
110°	180.7	184.0	184.0	184.0	182.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	208.9	212.5	211.9	210.2	208.9
115°	236.9	240.2	239.2	238.5	236.9
117.5°	264.6	269.3	266.3	264.6	262.8
120°	292.4	297.1	292.4	292.4	290.6
122.5°	317.8	323.7	320.8	319.2	317.8
125°	344.5	349.8	348.1	346.2	345.6
127.5°	370.5	377.1	374.7	372.2	370.5
130°	394.8	402.5	401.3	400.1	397.8
132.5°	422.1	428.1	428.4	425.5	423.7
135°	445.6	452.1	453.4	452.8	451.0
137.5°	471.8	477.1	478.2	477.8	475.2
140°	494.8	500.2	503.2	503.2	500.8
142.5°	518.6	523.8	525.6	526.1	523.8
145°	541.0	545.2	548.6	549.2	546.8
147.5°	561.0	566.4	568.9	569.9	567.6
150°	581.8	585.3	587.7	589.5	587.7
152.5°	600.2	603.7	606.7	609.1	606.7
155°	618.6	620.3	622.1	625.1	623.3
157.5°	634.5	635.7	636.8	641.0	638.0
160°	648.7	649.9	650.5	654.1	651.5
162.5°	661.7	661.7	662.3	666.4	663.4
165°	672.9	672.3	672.3	676.5	673.6
167.5°	683.0	681.1	681.1	685.4	682.5
170°	690.7	689.0	688.4	692.6	689.0
172.5°	696.0	694.2	693.7	697.9	694.2
175°	700.2	698.6	697.2	701.4	697.9
177.5°	702.6	700.9	699.6	703.1	699.6
180°	701.4	701.4	701.4	701.4	701.4

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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	11.92	12.91	12.76	13.77	14.85	11.50	12.49	12.34	13.35	14.43
	3H	13.57	14.46	14.42	15.33	16.43	13.11	13.99	13.96	14.87	15.97
	4H	14.15	14.98	15.01	15.86	16.98	13.69	14.52	14.55	15.40	16.52
	6H	14.53	15.31	15.41	16.19	17.32	14.07	14.85	14.95	15.73	16.86
	8H	14.63	15.37	15.52	16.27	17.40	14.17	14.91	15.06	15.81	16.94
	12H	14.68	15.38	15.57	16.28	17.43	14.21	14.92	15.11	15.81	16.97
4H	2H	12.39	13.23	13.26	14.11	15.22	12.05	12.89	12.92	13.77	14.88
	3H	14.24	14.94	15.12	15.85	16.98	13.86	14.56	14.74	15.47	16.60
	4H	14.94	15.58	15.84	16.49	17.64	14.55	15.18	15.44	16.09	17.25
	6H	15.44	15.99	16.35	16.92	18.08	15.04	15.60	15.96	16.53	17.68
	8H	15.58	16.10	16.50	17.02	18.19	15.18	15.70	16.10	16.62	17.80
	12H	15.65	16.11	16.58	17.06	18.24	15.24	15.71	16.18	16.65	17.83
8H	4H	15.14	15.65	16.05	16.58	17.75	14.79	15.30	15.70	16.23	17.40
	6H	15.75	16.17	16.69	17.14	18.31	15.39	15.82	16.33	16.79	17.96
	8H	15.95	16.33	16.90	17.29	18.48	15.60	15.97	16.55	16.93	18.12
	12H	16.07	16.41	17.03	17.36	18.60	15.70	16.04	16.66	16.99	18.23
12H	4H	15.13	15.59	16.06	16.53	17.71	14.78	15.25	15.72	16.19	17.37
	6H	15.77	16.15	16.72	17.11	18.30	15.43	15.81	16.38	16.77	17.95
	8H	16.00	16.34	16.96	17.29	18.52	15.66	15.99	16.61	16.94	18.18