

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: P907031

Luminaire Tested: DFN2DIP-TR2F0-040D020US835-RLLONL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P907031
REPORT IS A COMBINATION OF REPORTS P901746 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-040D020US835-RLLONL
Description: 2 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

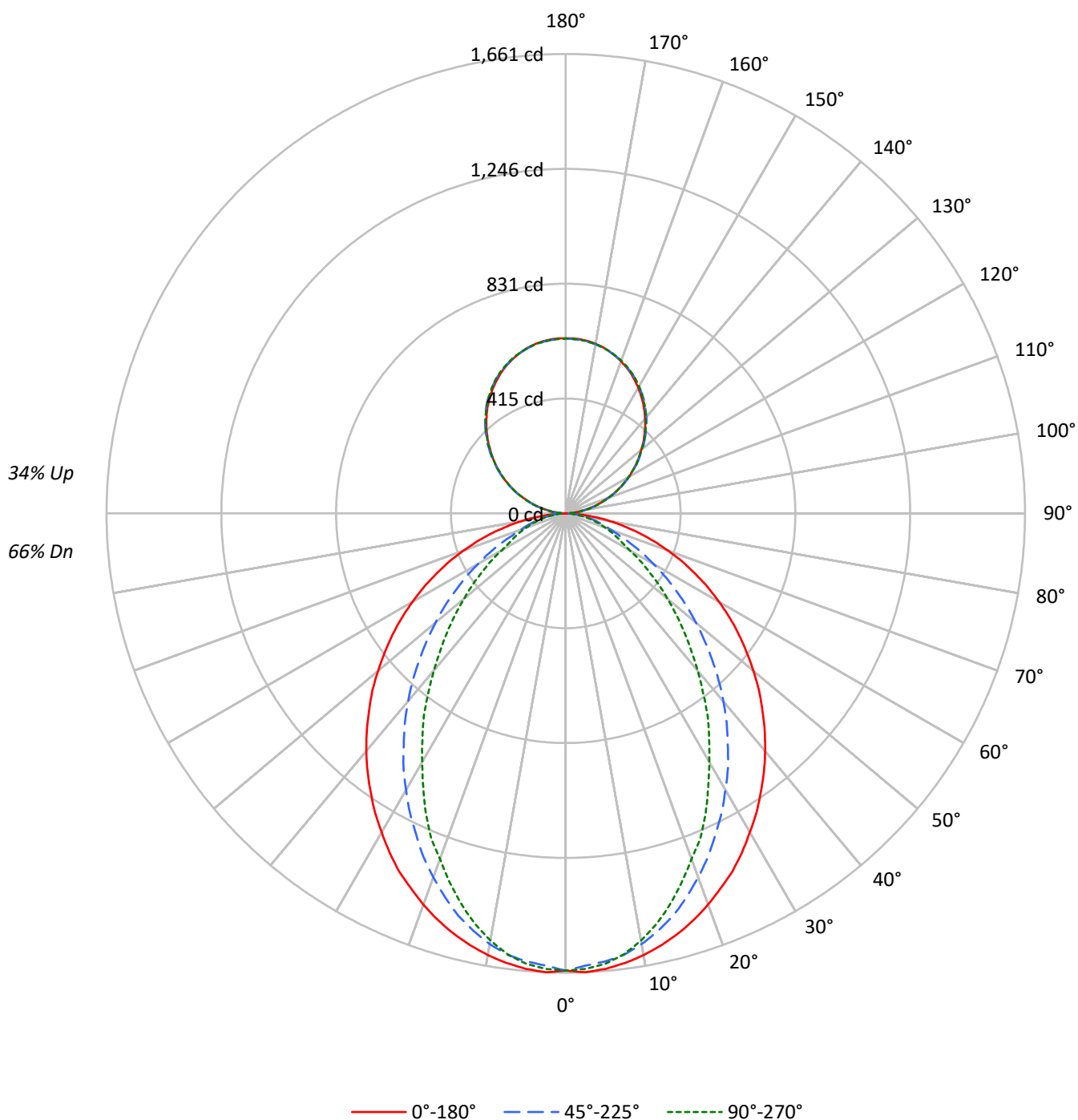
Lumens per Lamp: N/A
Luminaire Lumens: 5170.0 lumens
Efficiency: N/A
Efficacy: 100.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 51.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9933
Total Harmonic Distortion (THDi): 0.066
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

TEST NUMBER: P907031

CATALOG NUMBER: DFN2DIP-TR2F0-040D020US835-RLLONL

Luminous Intensity Polar Plot



TEST NUMBER: P907031

CATALOG NUMBER: DFN2DIP-TR2F0-040D020US835-RLLONL

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	111	111	111	111	104	104	104	104	92	92	92	81	81	81	71	71	71
1	102	98	94	91	96	92	89	86	82	79	77	72	70	69	63	62	61
2	93	86	80	75	88	81	76	72	72	68	65	64	61	58	57	54	52
3	86	76	69	63	80	72	66	61	65	59	55	57	53	50	51	48	45
4	79	68	60	54	74	65	58	52	58	52	48	52	47	44	46	42	40
5	73	61	53	47	68	58	51	45	52	46	42	47	42	38	42	38	35
6	67	55	47	41	63	52	45	40	47	41	37	42	38	34	38	34	31
7	62	50	42	37	59	48	40	35	43	37	33	39	34	30	35	31	28
8	58	46	38	33	55	44	37	32	40	34	29	36	31	27	32	28	25
9	54	42	35	29	51	40	33	29	36	31	27	33	28	25	30	26	23
10	51	39	31	27	48	37	30	26	34	28	24	31	26	23	28	24	21

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3687	3687	3687
5°	3688	3621	3646
10°	3646	3541	3521
15°	3590	3416	3332
20°	3518	3247	3102
25°	3445	3059	2880
30°	3348	2868	2601
35°	3252	2662	2355
40°	3155	2450	2076
45°	3042	2217	1822
50°	2926	1981	1575
55°	2803	1731	1338
60°	2661	1471	1096
65°	2497	1207	979
70°	2299	961	877
75°	2048	831	786
80°	1688	674	663
85°	1109	418	466

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3042 cd/sqm

TEST NUMBER: P907031

CATALOG NUMBER: DFN2DIP-TR2F0-040D020US835-RLLONL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	154.9	3.0
10°-20°	425.3	8.2
20°-30°	597.2	11.6
30°-40°	650.9	12.6
40°-50°	598.3	11.6
50°-60°	469.9	9.1
60°-70°	305.8	5.9
70°-80°	157.4	3.0
80°-90°	42.0	0.8
90°-100°	39.1	0.8
100°-110°	124.4	2.4
110°-120°	212.8	4.1
120°-130°	279.9	5.4
130°-140°	314.2	6.1
140°-150°	308.1	6.0
150°-160°	258.4	5.0
160°-170°	171.4	3.3
170°-180°	59.9	1.2
0°-30°	1177.4	22.8
0°-40°	1828.4	35.4
0°-60°	2896.5	56.0
0°-90°	3401.8	65.8
90°-120°	376.3	7.3
90°-150°	1278.5	24.7
90°-180°	1768.0	34.2
0°-180°	5170.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1653	1653	1653	1653	1653	
5°	1653	1646	1626	1640	1635	157
15°	1572	1556	1505	1477	1462	443
25°	1427	1379	1281	1219	1197	656
35°	1230	1154	1022	928	895	770
45°	1005	905	748	642	606	776
55°	764	648	486	396	368	683
65°	516	395	260	210	205	512
75°	275	170	120	109	108	291
85°	64	33	28	28	28	74
90°	1	7	19	18	18	5
95°	28	33	34	34	33	31
105°	115	116	118	118	118	121
115°	214	217	216	215	214	211
125°	311	315	314	312	312	278
135°	402	408	409	408	407	311
145°	488	492	495	495	493	305
155°	558	559	561	564	562	257
165°	607	606	606	610	607	171
175°	631	630	629	632	629	60
180°	632	632	632	632	632	



TEST NUMBER: P907031

CATALOG NUMBER: DFN2DIP-TR2F0-040D020US835-RLLONL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1653.2	1653.2	1653.2	1653.2	1653.2
2.5°	1660.7	1653.2	1636.7	1651.8	1648.7
5°	1653.2	1645.7	1626.2	1639.7	1635.3
7.5°	1639.7	1630.8	1609.9	1615.7	1608.3
10°	1621.8	1611.3	1581.4	1576.8	1568.0
12.5°	1599.4	1585.9	1545.4	1536.5	1520.0
15°	1572.4	1555.9	1505.1	1476.7	1461.8
17.5°	1541.0	1517.0	1454.1	1421.3	1397.3
20°	1505.1	1475.1	1400.3	1363.0	1330.0
22.5°	1466.2	1431.8	1344.9	1294.1	1271.8
25°	1427.3	1379.4	1280.6	1219.4	1196.8
27.5°	1381.0	1330.0	1220.8	1150.5	1116.0
30°	1331.6	1274.6	1154.9	1078.7	1038.3
32.5°	1283.7	1214.8	1092.2	1002.4	964.9
35°	1229.9	1153.5	1021.9	927.6	894.6
37.5°	1177.5	1095.1	956.0	852.7	815.4
40°	1122.1	1032.4	887.2	781.0	742.1
42.5°	1065.2	969.5	818.4	707.6	670.3
45°	1005.4	905.1	748.1	641.8	605.9
47.5°	948.6	842.4	680.8	574.5	541.6
50°	885.7	779.5	614.9	511.6	480.3
52.5°	824.3	712.1	552.1	453.3	424.9
55°	764.5	647.8	486.2	396.5	368.1
57.5°	703.2	583.5	427.9	344.1	320.2
60°	640.3	520.6	366.5	290.3	266.4
62.5°	579.1	459.4	314.1	242.4	230.5
65°	516.2	394.9	260.3	209.5	204.9
67.5°	456.4	335.1	209.5	184.0	179.5
70°	393.5	276.8	173.5	158.6	152.5
72.5°	333.7	222.9	145.1	133.2	130.2
75°	275.2	170.5	119.7	109.2	107.8
77.5°	217.0	121.1	94.3	88.3	85.2
80°	163.0	86.8	71.7	65.9	65.9
82.5°	113.7	58.4	49.4	46.3	46.3
85°	64.3	32.9	28.4	28.4	28.4
87.5°	24.0	11.9	11.9	10.5	10.5
90°	0.6	6.9	18.7	17.5	18.1
92.5°	11.8	16.0	16.6	17.2	17.2
95°	27.8	33.2	34.1	34.1	33.2
97.5°	46.3	51.3	53.4	53.4	53.4
100°	67.7	72.1	73.6	73.6	73.0
102.5°	90.2	93.4	95.5	96.1	95.5
105°	114.8	116.3	117.5	118.4	118.4
107.5°	139.2	141.5	141.5	141.9	139.2
110°	162.9	165.9	165.9	165.9	164.4

TEST NUMBER: P907031

CATALOG NUMBER: DFN2DIP-TR2F0-040D020US835-RLLONL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	188.4	191.6	191.1	189.5	188.4
115°	213.6	216.6	215.7	215.1	213.6
117.5°	238.6	242.8	240.1	238.6	237.0
120°	263.7	267.9	263.7	263.7	262.0
122.5°	286.6	291.9	289.3	287.8	286.6
125°	310.6	315.4	313.9	312.2	311.6
127.5°	334.1	340.0	337.9	335.6	334.1
130°	356.0	362.9	361.9	360.8	358.7
132.5°	380.6	386.0	386.3	383.7	382.1
135°	401.8	407.7	408.8	408.3	406.7
137.5°	425.4	430.2	431.2	430.8	428.5
140°	446.2	451.0	453.7	453.7	451.6
142.5°	467.6	472.3	473.9	474.4	472.3
145°	487.8	491.6	494.7	495.2	493.1
147.5°	505.9	510.7	513.0	513.9	511.8
150°	524.6	527.8	529.9	531.6	529.9
152.5°	541.2	544.4	547.1	549.2	547.1
155°	557.8	559.3	561.0	563.7	562.0
157.5°	572.1	573.2	574.2	578.0	575.3
160°	584.9	586.0	586.6	589.8	587.5
162.5°	596.7	596.7	597.2	600.9	598.2
165°	606.8	606.2	606.2	610.0	607.4
167.5°	615.9	614.2	614.2	618.0	615.4
170°	622.8	621.3	620.7	624.5	621.3
172.5°	627.6	626.0	625.5	629.3	626.0
175°	631.4	629.9	628.7	632.5	629.3
177.5°	633.5	632.0	630.8	634.0	630.8
180°	632.5	632.5	632.5	632.5	632.5

TEST NUMBER: P907031

CATALOG NUMBER: DFN2DIP-TR2F0-040D020US835-RLONL

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	12.91	13.89	13.73	14.72	15.75	8.89	9.87	9.71	10.71	11.73
	3H	14.58	15.45	15.41	16.30	17.35	10.08	10.95	10.91	11.80	12.85
	4H	15.18	16.00	16.02	16.85	17.92	10.52	11.35	11.37	12.20	13.27
	6H	15.59	16.35	16.44	17.20	18.29	10.84	11.60	11.70	12.46	13.54
	8H	15.71	16.43	16.57	17.31	18.39	10.93	11.65	11.79	12.53	13.61
	12H	15.76	16.45	16.64	17.32	18.43	10.97	11.66	11.84	12.53	13.63
4H	2H	12.94	13.77	13.80	14.62	15.69	9.49	10.32	10.34	11.17	12.24
	3H	14.76	15.45	15.62	16.33	17.41	10.84	11.52	11.70	12.41	13.49
	4H	15.44	16.06	16.31	16.94	18.05	11.38	12.00	12.25	12.88	13.99
	6H	15.94	16.48	16.83	17.38	18.50	11.79	12.33	12.68	13.23	14.35
	8H	16.11	16.61	17.00	17.51	18.63	11.91	12.41	12.80	13.31	14.44
	12H	16.19	16.65	17.11	17.56	18.70	11.97	12.43	12.89	13.34	14.48
8H	4H	15.41	15.92	16.31	16.82	17.94	11.66	12.16	12.55	13.06	14.18
	6H	15.96	16.38	16.88	17.32	18.44	12.16	12.57	13.08	13.51	14.64
	8H	16.16	16.53	17.09	17.46	18.61	12.34	12.70	13.27	13.64	14.78
	12H	16.29	16.61	17.22	17.54	18.74	12.45	12.77	13.38	13.70	14.89
12H	4H	15.37	15.82	16.28	16.74	17.87	11.66	12.12	12.58	13.03	14.17
	6H	15.93	16.30	16.86	17.24	18.38	12.20	12.57	13.13	13.50	14.65
	8H	16.15	16.47	17.08	17.39	18.59	12.40	12.73	13.34	13.65	14.85