

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: P904526

Luminaire Tested: DFN2DIP-TR3F0-090D050US830-RLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P904526
REPORT IS A COMBINATION OF REPORTS P900312 AND P897195
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR3F0-090D050US830-RLLFLL
Description: 3 foot, Triangle Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

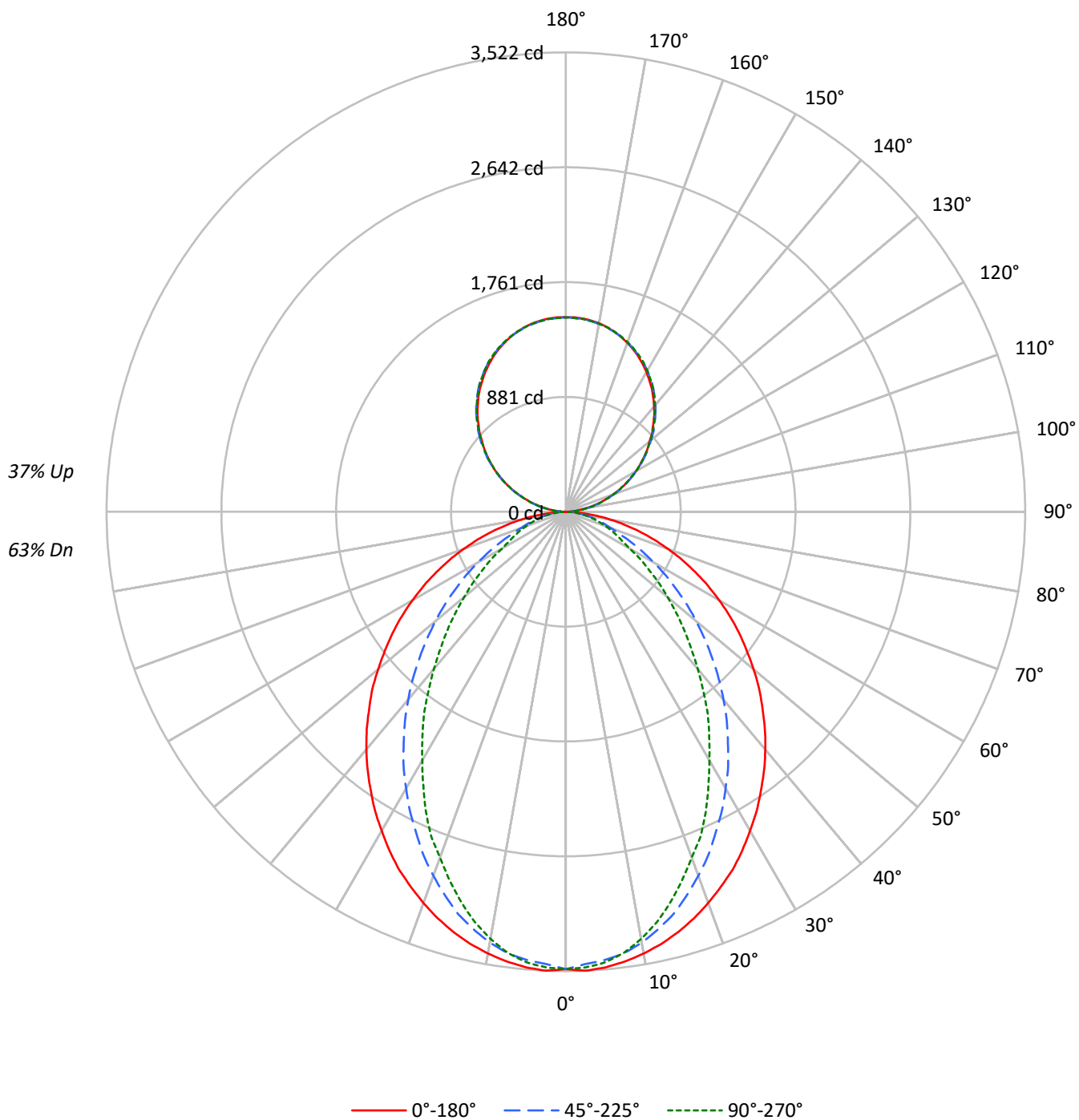
Lumens per Lamp: N/A
Luminaire Lumens: 11381.2 lumens
Efficiency: N/A
Efficacy: 86.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 2.74' x L: 3.16' x H: 0.1')
CIE Type: Semi-Direct

Input Watts (W): 132
Input Voltage (V):
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

TEST NUMBER: P904526

CATALOG NUMBER: DFN2DIP-TR3F0-090D050US830-RLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P904526

CATALOG NUMBER: DFN2DIP-TR3F0-090D050US830-RLLFLL

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	104	104	104	104	91	91	91	79	79	79	68	68	68
1	101	97	93	90	95	91	88	85	81	78	76	71	69	67	61	60	59
2	93	86	80	75	87	81	75	71	71	67	64	63	60	57	55	53	51
3	85	76	69	63	80	72	65	60	64	59	54	56	52	49	49	46	44
4	78	68	60	54	73	64	57	52	57	51	47	50	46	43	44	41	38
5	72	61	53	47	68	57	50	45	51	45	41	46	41	37	40	37	34
6	67	55	47	41	62	52	45	39	47	41	36	41	37	33	37	33	30
7	62	50	42	36	58	47	40	35	42	37	32	38	33	30	34	30	27
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	24
9	54	42	34	29	51	40	33	28	36	30	26	32	28	24	29	25	22
10	50	38	31	26	47	37	30	25	33	28	24	30	25	22	27	23	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4369	4369	4369
5°	4373	4296	4324
10°	4328	4208	4181
15°	4266	4065	3960
20°	4184	3870	3691
25°	4101	3652	3431
30°	3990	3429	3103
35°	3882	3189	2814
40°	3771	2941	2484
45°	3642	2667	2184
50°	3509	2391	1892
55°	3370	2095	1612
60°	3208	1788	1324
65°	3023	1475	1188
70°	2797	1184	1071
75°	2513	1036	968
80°	2103	857	830
85°	1431	555	607

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
Vertical Angle: 45°
Luminance: 3642 cd/sqm

TEST NUMBER: P904526

CATALOG NUMBER: DFN2DIP-TR3F0-090D050US830-RLLFLL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	328.6	2.9
10°-20°	902.0	7.9
20°-30°	1266.4	11.1
30°-40°	1380.5	12.1
40°-50°	1268.8	11.1
50°-60°	996.5	8.8
60°-70°	648.6	5.7
70°-80°	333.9	2.9
80°-90°	89.5	0.8
90°-100°	92.2	0.8
100°-110°	293.0	2.6
110°-120°	501.5	4.4
120°-130°	659.5	5.8
130°-140°	740.3	6.5
140°-150°	725.9	6.4
150°-160°	609.0	5.4
160°-170°	403.9	3.5
170°-180°	141.2	1.2
0°-30°	2497.0	21.9
0°-40°	3877.5	34.1
0°-60°	6142.8	54.0
0°-90°	7214.7	63.4
90°-120°	886.7	7.8
90°-150°	3012.5	26.5
90°-180°	4167.0	36.6
0°-180°	11381.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3506	3506	3506	3506	3506	
5°	3506	3490	3449	3477	3468	332
15°	3335	3300	3192	3132	3100	940
25°	3027	2925	2716	2586	2538	1392
35°	2608	2446	2167	1967	1897	1632
45°	2132	1920	1586	1361	1285	1647
55°	1621	1374	1031	841	781	1449
65°	1095	838	552	444	435	1085
75°	584	362	254	232	229	617
85°	136	70	60	60	60	156
90°	1	16	44	41	43	11
95°	66	78	80	80	78	73
105°	270	274	277	279	279	285
115°	503	510	508	507	503	498
125°	732	743	740	736	734	654
135°	947	961	963	962	958	732
145°	1149	1158	1166	1167	1162	718
155°	1314	1318	1322	1328	1324	605
165°	1430	1428	1428	1438	1431	403
175°	1488	1484	1482	1490	1483	141
180°	1490	1490	1490	1490	1490	

TEST NUMBER: P904526

CATALOG NUMBER: DFN2DIP-TR3F0-090D050US830-RLLFLL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3506.0	3506.0	3506.0	3506.0	3506.0
2.5°	3521.8	3506.0	3470.9	3503.0	3496.5
5°	3506.0	3490.1	3448.8	3477.3	3467.9
7.5°	3477.3	3458.5	3414.1	3426.5	3410.7
10°	3439.3	3417.1	3353.8	3344.0	3325.2
12.5°	3391.8	3363.3	3277.4	3258.6	3223.5
15°	3334.6	3299.7	3191.9	3131.6	3100.0
17.5°	3268.0	3217.2	3083.8	3014.2	2963.4
20°	3191.9	3128.3	2969.7	2890.6	2820.6
22.5°	3109.4	3036.4	2852.2	2744.5	2697.1
25°	3027.0	2925.3	2715.9	2586.0	2538.2
27.5°	2928.7	2820.6	2589.0	2439.9	2366.8
30°	2824.0	2703.1	2449.3	2287.7	2201.9
32.5°	2722.3	2576.2	2316.3	2125.8	2046.4
35°	2608.2	2446.3	2167.2	1967.3	1897.2
37.5°	2497.1	2322.4	2027.5	1808.4	1729.3
40°	2379.6	2189.4	1881.4	1656.2	1573.8
42.5°	2259.1	2056.2	1735.6	1500.7	1421.5
45°	2132.2	1919.5	1586.5	1360.9	1284.9
47.5°	2011.7	1786.5	1443.8	1218.2	1148.6
50°	1878.4	1653.1	1304.1	1085.0	1018.6
52.5°	1748.1	1510.1	1170.8	961.4	901.2
55°	1621.2	1373.8	1031.0	840.9	780.6
57.5°	1491.3	1237.5	907.6	729.8	679.0
60°	1357.9	1104.1	777.3	615.7	564.9
62.5°	1228.0	974.2	666.2	514.1	488.8
65°	1094.7	837.5	552.0	444.3	434.6
67.5°	967.8	710.6	444.3	390.1	380.7
70°	834.5	587.1	368.0	336.3	323.5
72.5°	707.6	472.6	307.6	282.4	276.1
75°	583.7	361.6	253.8	231.6	228.6
77.5°	460.1	256.8	199.9	187.2	180.8
80°	345.7	184.2	152.1	139.7	139.7
82.5°	241.0	123.9	104.7	98.3	98.3
85°	136.3	69.7	60.2	60.2	60.2
87.5°	50.8	25.3	25.3	22.2	22.2
90°	1.3	16.2	44.0	41.4	42.7
92.5°	27.9	37.7	39.1	40.4	40.4
95°	65.6	78.2	80.4	80.4	78.2
97.5°	109.1	120.8	125.8	125.8	125.8
100°	159.5	169.8	173.4	173.4	172.1
102.5°	212.5	220.2	225.1	226.5	225.1
105°	270.5	274.1	276.8	279.0	279.0
107.5°	328.0	333.4	333.4	334.3	328.0
110°	383.7	391.0	391.0	391.0	387.3



TEST NUMBER: P904526

CATALOG NUMBER: DFN2DIP-TR3F0-090D050US830-RLLFLL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	443.9	451.6	450.3	446.7	443.9
115°	503.2	510.5	508.2	506.9	503.2
117.5°	562.1	572.0	565.7	562.1	558.6
120°	621.4	631.3	621.4	621.4	617.4
122.5°	675.3	688.0	681.6	678.1	675.3
125°	732.0	743.2	739.6	735.6	734.2
127.5°	787.2	801.2	796.3	790.8	787.2
130°	839.0	855.1	852.8	850.2	845.2
132.5°	896.9	909.5	910.4	904.1	900.5
135°	946.8	960.6	963.4	962.1	958.5
137.5°	1002.5	1013.7	1016.0	1015.0	1009.7
140°	1051.4	1062.7	1068.9	1068.9	1064.0
142.5°	1101.7	1113.0	1116.6	1117.9	1113.0
145°	1149.4	1158.4	1165.5	1167.0	1162.0
147.5°	1192.1	1203.3	1208.7	1211.0	1206.0
150°	1236.1	1243.8	1248.7	1252.7	1248.7
152.5°	1275.3	1282.9	1289.1	1294.1	1289.1
155°	1314.3	1317.9	1321.9	1328.2	1324.2
157.5°	1348.0	1350.7	1352.9	1362.0	1355.7
160°	1378.1	1380.8	1382.1	1389.8	1384.4
162.5°	1406.0	1406.0	1407.3	1415.9	1409.6
165°	1429.8	1428.4	1428.4	1437.5	1431.2
167.5°	1451.3	1447.3	1447.3	1456.3	1450.0
170°	1467.5	1464.0	1462.6	1471.6	1464.0
172.5°	1478.8	1475.2	1473.9	1482.8	1475.2
175°	1487.8	1484.1	1481.5	1490.4	1482.8
177.5°	1492.7	1489.1	1486.4	1494.0	1486.4
180°	1490.4	1490.4	1490.4	1490.4	1490.4

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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	13.38	14.34	14.22	15.19	16.26	9.36	10.31	10.20	11.17	12.24
	3H	15.06	15.91	15.91	16.78	17.88	10.55	11.41	11.41	12.27	13.37
	4H	15.67	16.47	16.54	17.35	18.45	11.01	11.81	11.87	12.68	13.79
	6H	16.09	16.83	16.97	17.71	18.83	11.33	12.07	12.21	12.95	14.07
	8H	16.21	16.92	17.10	17.82	18.94	11.42	12.12	12.31	13.02	14.14
	12H	16.28	16.95	17.17	17.84	18.98	11.46	12.13	12.36	13.03	14.17
4H	2H	13.42	14.22	14.29	15.09	16.20	9.97	10.77	10.84	11.64	12.75
	3H	15.25	15.91	16.13	16.82	17.94	11.32	11.99	12.21	12.89	14.02
	4H	15.94	16.54	16.83	17.45	18.59	11.87	12.48	12.76	13.38	14.53
	6H	16.45	16.97	17.36	17.90	19.05	12.29	12.81	13.20	13.74	14.89
	8H	16.62	17.11	17.53	18.03	19.19	12.42	12.91	13.33	13.83	14.99
	12H	16.72	17.16	17.65	18.09	19.26	12.48	12.92	13.42	13.86	15.03
8H	4H	15.91	16.40	16.82	17.32	18.48	12.15	12.64	13.07	13.56	14.72
	6H	16.47	16.87	17.41	17.84	19.00	12.67	13.07	13.61	14.03	15.20
	8H	16.68	17.04	17.63	17.99	19.17	12.85	13.21	13.80	14.16	15.35
	12H	16.82	17.13	17.77	18.08	19.31	12.97	13.29	13.93	14.23	15.46
12H	4H	15.87	16.31	16.80	17.25	18.42	12.16	12.60	13.09	13.54	14.71
	6H	16.45	16.80	17.40	17.76	18.94	12.71	13.07	13.66	14.03	15.21
	8H	16.67	16.98	17.62	17.93	19.16	12.92	13.24	13.88	14.18	15.42