

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: P926084

Luminaire Tested: DFN2DIP-TR2F0-020D020US950-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P926084
REPORT IS A COMBINATION OF REPORTS P900221 AND P897145
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-TR2F0-020D020US950-FLLFLL
Description: 2 foot, Triangle Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

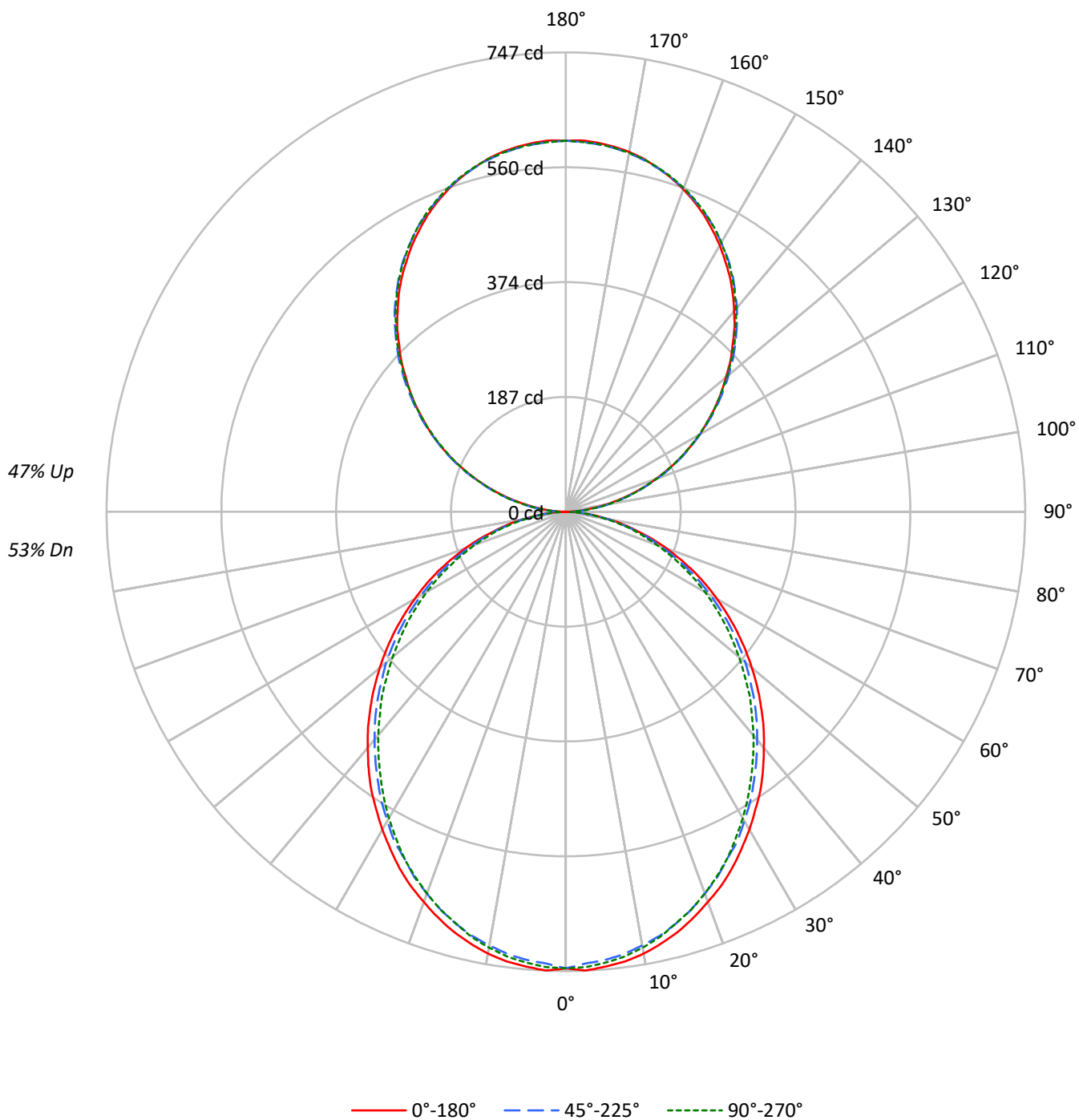
Lumens per Lamp: N/A
Luminaire Lumens: 3577.5 lumens
Efficiency: N/A
Efficacy: 117.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 2.04' x L: 2.36' x H: 0.1')
CIE Type: General Diffuse

Input Watts (W): 30.5
Input Voltage (V): 120
Input Current (Ain): 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



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	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	0
RCR																				
0	108	108	108	108	100	100	100	100	85	85	85		71	71	71		59	59	59	53
1	98	94	90	87	91	87	84	81	74	72	70		63	61	59		52	51	50	45
2	90	82	76	71	83	76	71	66	65	61	58		55	52	50		46	44	42	37
3	82	72	65	59	75	67	61	55	58	53	49		49	45	42		41	38	36	32
4	75	64	56	50	69	60	52	47	51	46	41		43	39	36		36	33	31	27
5	69	57	49	43	63	53	46	40	46	40	36		39	35	31		33	29	27	24
6	63	51	43	37	58	48	40	35	41	36	31		35	31	27		30	26	24	21
7	59	46	38	33	54	43	36	31	37	32	28		32	28	24		27	24	21	18
8	54	42	34	29	50	39	32	27	34	29	24		29	25	22		25	21	19	16
9	51	38	31	26	47	36	29	24	31	26	22		27	23	19		23	20	17	15
10	47	35	28	23	44	33	26	22	29	23	20		25	21	18		21	18	15	13

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1656	1656	1656
5°	1656	1629	1641
10°	1640	1604	1616
15°	1614	1573	1578
20°	1579	1533	1540
25°	1544	1486	1496
30°	1500	1441	1441
35°	1459	1389	1383
40°	1409	1337	1328
45°	1359	1284	1271
50°	1304	1228	1206
55°	1246	1164	1144
60°	1181	1089	1075
65°	1109	1010	993
70°	1018	913	903
75°	892	798	817
80°	740	652	660
85°	503	411	410

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 1359 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	69.9	2.0
10°-20°	196.6	5.5
20°-30°	288.9	8.1
30°-40°	335.6	9.4
40°-50°	335.2	9.4
50°-60°	292.2	8.2
60°-70°	216.0	6.0
70°-80°	122.2	3.4
80°-90°	34.0	1.0
90°-100°	37.3	1.0
100°-110°	118.7	3.3
110°-120°	203.0	5.7
120°-130°	267.0	7.5
130°-140°	299.7	8.4
140°-150°	293.9	8.2
150°-160°	246.5	6.9
160°-170°	163.5	4.6
170°-180°	57.1	1.6
0°-30°	555.4	15.5
0°-40°	891.0	24.9
0°-60°	1518.4	42.4
0°-90°	1890.6	52.8
90°-120°	359.0	10.0
90°-150°	1219.7	34.1
90°-180°	1687.0	47.2
0°-180°	3577.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	742	742	742	742	742	
5°	742	740	732	737	736	70
15°	707	702	693	696	692	199
25°	640	634	622	623	622	294
35°	552	545	533	529	525	345
45°	449	444	433	426	423	347
55°	340	336	327	318	315	304
65°	229	225	218	211	208	227
75°	120	119	115	111	112	128
85°	29	28	28	26	25	33
90°	1	7	18	17	17	3
95°	26	32	32	32	32	30
105°	110	111	112	113	113	116
115°	204	207	206	205	204	202
125°	296	301	300	298	297	265
135°	383	389	390	390	388	296
145°	465	469	472	472	470	291
155°	532	534	535	538	536	245
165°	579	578	578	582	580	163
175°	602	601	600	603	600	57
180°	603	603	603	603	603	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	742.4	742.4	742.4	742.4	742.4
2.5°	746.7	743.2	735.2	742.4	741.1
5°	742.4	739.6	731.7	737.4	736.0
7.5°	737.4	733.1	725.3	731.1	729.6
10°	729.6	724.7	716.1	721.7	719.6
12.5°	718.8	714.6	706.1	709.6	708.2
15°	706.7	702.5	693.2	696.0	692.5
17.5°	691.7	687.5	678.2	681.7	678.2
20°	675.3	671.0	661.0	663.2	660.4
22.5°	658.9	652.5	643.2	643.2	641.8
25°	639.7	633.9	621.8	623.2	621.8
27.5°	618.2	613.2	604.0	601.9	598.3
30°	596.8	591.1	580.4	578.3	575.4
32.5°	573.9	569.7	558.3	554.0	551.1
35°	551.9	544.7	533.3	529.0	525.4
37.5°	526.9	520.4	509.0	504.0	500.4
40°	501.1	495.4	484.0	477.7	474.7
42.5°	476.1	470.4	459.1	451.9	447.6
45°	449.0	444.1	433.3	425.5	422.6
47.5°	422.6	417.7	406.2	398.3	394.1
50°	394.8	391.2	381.2	371.2	367.7
52.5°	367.7	362.6	353.4	345.5	340.6
55°	339.8	335.5	326.9	318.4	314.8
57.5°	312.0	308.4	299.1	290.6	287.6
60°	284.1	281.3	271.3	263.4	261.3
62.5°	257.0	252.0	244.9	237.7	234.9
65°	229.2	224.9	217.8	211.3	207.8
67.5°	200.6	197.0	190.6	185.6	182.8
70°	174.2	171.3	164.9	159.9	157.1
72.5°	147.1	144.2	140.6	135.7	133.6
75°	119.9	118.6	114.9	110.7	112.1
77.5°	95.7	92.8	91.3	89.2	87.1
80°	71.5	70.7	69.3	67.1	65.6
82.5°	48.6	48.6	47.9	45.0	45.0
85°	29.2	28.5	27.9	25.7	25.0
87.5°	12.9	11.4	10.0	7.9	7.2
90°	0.6	6.6	17.8	16.7	17.3
92.5°	11.3	15.3	15.8	16.4	16.4
95°	26.5	31.7	32.5	32.5	31.7
97.5°	44.2	48.9	50.9	50.9	50.9
100°	64.6	68.8	70.2	70.2	69.6
102.5°	86.1	89.1	91.1	91.7	91.1
105°	109.5	111.0	112.1	113.0	113.0
107.5°	132.8	135.0	135.0	135.4	132.8
110°	155.4	158.3	158.3	158.3	156.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	179.7	182.8	182.3	180.8	179.7
115°	203.8	206.6	205.8	205.2	203.8
117.5°	227.6	231.6	229.1	227.6	226.1
120°	251.6	255.6	251.6	251.6	249.9
122.5°	273.4	278.5	276.0	274.6	273.4
125°	296.3	300.9	299.5	297.8	297.3
127.5°	318.7	324.4	322.4	320.2	318.7
130°	339.6	346.2	345.3	344.2	342.2
132.5°	363.1	368.2	368.5	366.0	364.5
135°	383.3	388.9	390.0	389.5	388.0
137.5°	405.8	410.4	411.4	411.0	408.8
140°	425.7	430.3	432.8	432.8	430.8
142.5°	446.1	450.6	452.1	452.6	450.6
145°	465.4	469.0	471.9	472.4	470.4
147.5°	482.6	487.2	489.4	490.3	488.3
150°	500.5	503.5	505.5	507.1	505.5
152.5°	516.3	519.4	521.9	523.9	521.9
155°	532.1	533.6	535.2	537.8	536.1
157.5°	545.8	546.8	547.8	551.4	548.8
160°	558.0	559.0	559.6	562.7	560.5
162.5°	569.3	569.3	569.7	573.3	570.7
165°	578.9	578.3	578.3	581.9	579.5
167.5°	587.6	585.9	585.9	589.6	587.1
170°	594.2	592.7	592.1	595.8	592.7
172.5°	598.7	597.2	596.7	600.4	597.2
175°	602.4	600.9	599.8	603.4	600.4
177.5°	604.4	602.9	601.8	604.8	601.8
180°	603.4	603.4	603.4	603.4	603.4

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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	9.15	10.04	10.09	10.99	12.22	8.73	9.62	9.66	10.57	11.80
	3H	10.79	11.59	11.74	12.55	13.80	10.33	11.13	11.28	12.09	13.34
	4H	11.37	12.12	12.32	13.08	14.34	10.91	11.66	11.86	12.62	13.89
	6H	11.75	12.44	12.72	13.41	14.69	11.29	11.98	12.26	12.95	14.23
	8H	11.85	12.51	12.82	13.49	14.77	11.39	12.05	12.36	13.03	14.31
	12H	11.89	12.52	12.87	13.50	14.79	11.42	12.05	12.40	13.03	14.33
4H	2H	9.61	10.36	10.57	11.33	12.59	9.27	10.02	10.23	10.99	12.25
	3H	11.45	12.08	12.42	13.07	14.35	11.07	11.70	12.04	12.69	13.97
	4H	12.15	12.72	13.13	13.71	15.01	11.75	12.33	12.74	13.31	14.62
	6H	12.64	13.14	13.64	14.15	15.45	12.25	12.74	13.24	13.75	15.05
	8H	12.78	13.24	13.78	14.25	15.56	12.38	12.85	13.38	13.85	15.16
	12H	12.84	13.26	13.86	14.28	15.60	12.44	12.86	13.45	13.88	15.19
8H	4H	12.34	12.80	13.33	13.80	15.11	11.98	12.45	12.98	13.45	14.76
	6H	12.94	13.32	13.96	14.37	15.68	12.59	12.97	13.61	14.02	15.33
	8H	13.15	13.48	14.18	14.52	15.85	12.79	13.13	13.82	14.16	15.49
	12H	13.26	13.56	14.30	14.59	15.96	12.89	13.19	13.93	14.22	15.59
12H	4H	12.32	12.74	13.34	13.76	15.08	11.98	12.39	12.99	13.41	14.73
	6H	12.97	13.30	14.00	14.34	15.67	12.62	12.96	13.65	13.99	15.32
	8H	13.19	13.49	14.23	14.52	15.89	12.85	13.14	13.88	14.17	15.54