

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: P905158

Luminaire Tested: DFN2DIP-HX2F0-020D050US835-FLLFLL

Issue Date: 11/21/2024

Test Information

Test Method: LM-79-2019
Report Number: P905158
REPORT IS A COMBINATION OF REPORTS P899181 AND P896039
Test Lab: INNOVATION CENTER
Issue Date: 11/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX2F0-020D050US835-FLLFLL
Description: 2 foot, Hexagon Define Geo, with Direct Frosted Lens, Indirect Frosted Lens
Light Source: -
Ballast/Driver: -

Summary

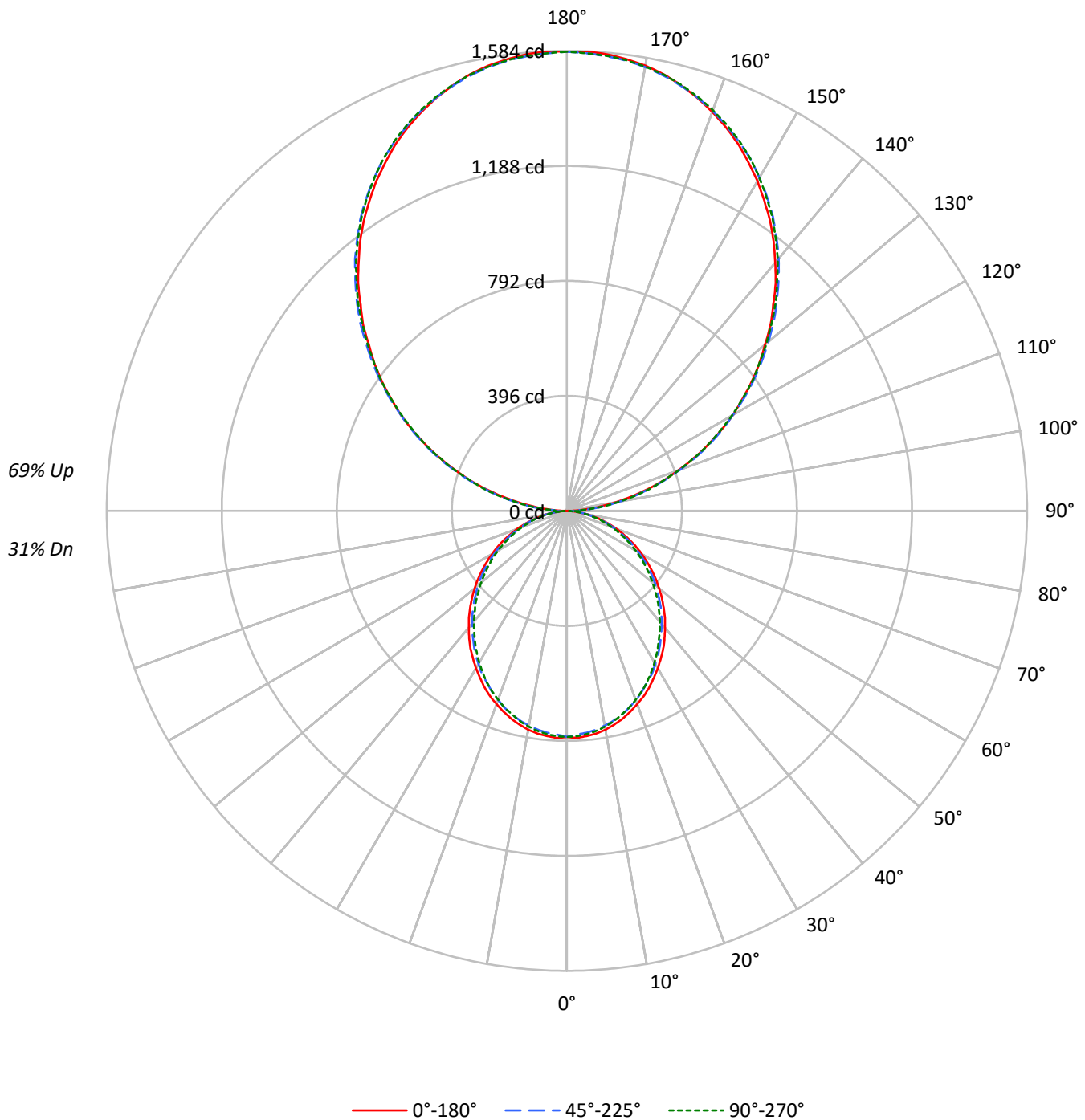
Lumens per Lamp: N/A
Luminaire Lumens: 6405.0 lumens
Efficiency: N/A
Efficacy: 119.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular w/ Sides (W: 1.99' x L: 2.3' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 53.7
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

TEST NUMBER: P905158

CATALOG NUMBER: DFN2DIP-HX2F0-020D050US835-FLLFLL

Luminous Intensity Polar Plot



TEST NUMBER: P905158

CATALOG NUMBER: DFN2DIP-HX2F0-020D050US835-FLLFL

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1834	1834	1834
5°	1834	1804	1817
10°	1816	1775	1789
15°	1786	1741	1747
20°	1747	1696	1704
25°	1708	1644	1656
30°	1660	1594	1595
35°	1615	1536	1530
40°	1559	1478	1469
45°	1503	1419	1405
50°	1442	1357	1333
55°	1378	1286	1265
60°	1305	1202	1187
65°	1225	1114	1096
70°	1124	1007	997
75°	984	879	901
80°	815	716	726
85°	552	449	450

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 2123 cd/sqm

TEST NUMBER: P905158

CATALOG NUMBER: DFN2DIP-HX2F0-020D050US835-FLLFLL

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	

TEST NUMBER: P905158

CATALOG NUMBER: DFN2DIP-HX2F0-020D050US835-FLLFLL

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

TEST NUMBER: P905158

CATALOG NUMBER: DFN2DIP-HX2F0-020D050US835-FLLFLL

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

TEST NUMBER: P905158

CATALOG NUMBER: DFN2DIP-HX2F0-020D050US835-FLLFLL

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	7.16	7.87	8.26	8.97	10.49	6.73	7.45	7.84	8.55	10.07
	3H	8.78	9.42	9.89	10.53	12.06	8.32	8.96	9.43	10.07	11.60
	4H	9.35	9.95	10.47	11.06	12.60	8.89	9.49	10.01	10.60	12.14
	6H	9.72	10.28	10.85	11.39	12.94	9.26	9.82	10.39	10.93	12.48
	8H	9.81	10.34	10.94	11.47	13.01	9.35	9.88	10.49	11.01	12.56
	12H	9.84	10.35	10.98	11.47	13.04	9.38	9.88	10.52	11.01	12.58
4H	2H	7.59	8.20	8.72	9.31	10.85	7.25	7.86	8.38	8.97	10.51
	3H	9.41	9.92	10.55	11.06	12.61	9.03	9.54	10.17	10.67	12.23
	4H	10.10	10.57	11.24	11.69	13.27	9.71	10.17	10.85	11.30	12.87
	6H	10.59	10.98	11.73	12.13	13.70	10.19	10.59	11.34	11.74	13.30
	8H	10.72	11.09	11.87	12.23	13.81	10.32	10.69	11.47	11.83	13.42
	12H	10.77	11.11	11.94	12.26	13.85	10.37	10.71	11.53	11.86	13.44
8H	4H	10.28	10.65	11.42	11.79	13.37	9.92	10.30	11.07	11.44	13.02
	6H	10.87	11.18	12.04	12.36	13.94	10.52	10.83	11.69	12.01	13.59
	8H	11.07	11.34	12.25	12.50	14.10	10.72	10.99	11.89	12.15	13.75
	12H	11.18	11.42	12.36	12.58	14.21	10.81	11.05	11.99	12.21	13.84
12H	4H	10.25	10.59	11.41	11.74	13.33	9.91	10.25	11.07	11.40	12.98
	6H	10.90	11.16	12.07	12.33	13.92	10.55	10.82	11.73	11.98	13.58
	8H	11.11	11.35	12.29	12.51	14.14	10.77	11.00	11.94	12.16	13.79