



UL LLC
1075 W Lambert Rd Suite B
Brea, CA 92821

Indoor Distribution Test Report

Relevant Standards
IES LM-79-2008, ANSI C82.77-2002

Prepared For
NEMALUX INC
COREY TRACY
1018 72 AVE NE
CALGARY, T2E 8V9
CANADA

Catalog Number
LS-00-01-50-08
Order Number
12539410
Test Number
12539410.01

Test Date

2018-10-15

Prepared By

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Approved By

Yilmaz Yucelidag, Project Handler

The results contained in this report pertain only to the tested sample.
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Luminaire Description: Black cylindrical metal housing with clear glass lens
Lamp: 96 White LEDs
Mounting: Surface - ceiling
Ballast/Driver: 1017-02-04-102 A-04 PROTOTYPE

Luminaire



Luminaire Characteristics

Luminous Diameter: 3.00 in.
Luminous Width: 4.250 in.

Summary of Results

Total Luminaire Output:	1545 Lumens
Luminaire Efficacy:	78.2 lm/w
Maximum Candela:	210 Candela

Test Conditions

Test Temperature:	24.8 °C
Voltage:	120.1 VAC
Current:	0.1699 A
Power:	19.76 W
Power Factor:	0.968
Frequency:	60 Hz
Current THD:	25.6 %

Laboratory results may not be representative of field performance
Ballast factors have not been applied



Distribution - Goniophotometer

Distribution Test Conditions

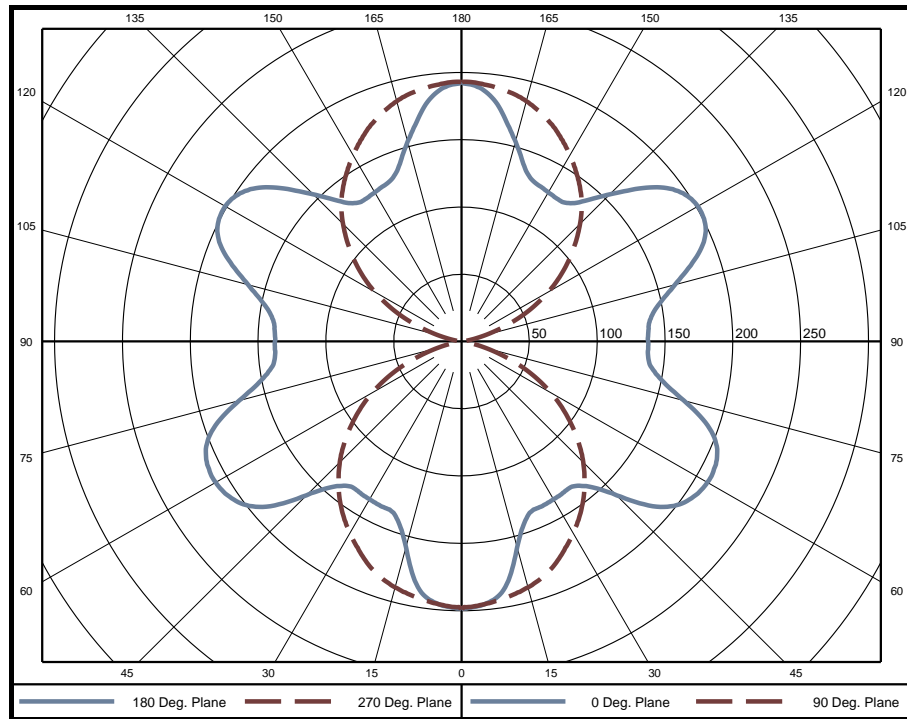
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.8 °C	120.1 VAC	0.1699 A	19.76 W	0.968	60 Hz	25.6 %

Summary of Results

Spacing Criteria
 0-180: 0.96
 90-270: 1.23

Total Lumen Output: 1545 Lumens
Luminaire Efficacy: 78.2 lm/w
Maximum Candela: 210 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	4.74	0.3%	60-65	66.63	4.3%	120-125	61.10	4.0%
5-10	13.91	0.9%	65-70	66.97	4.3%	125-130	55.55	3.6%
10-15	21.89	1.4%	70-75	63.94	4.1%	130-135	49.35	3.2%
15-20	27.78	1.8%	75-80	56.11	3.6%	135-140	44.61	2.9%
20-25	32.34	2.1%	80-85	48.35	3.1%	140-145	41.15	2.7%
25-30	36.47	2.4%	85-90	45.18	2.9%	145-150	38.15	2.5%
30-35	40.05	2.6%	90-95	45.15	2.9%	150-155	34.81	2.3%
35-40	42.93	2.8%	95-100	47.88	3.1%	155-160	31.04	2.0%
40-45	46.21	3.0%	100-105	54.32	3.5%	160-165	26.60	1.7%
45-50	51.73	3.3%	105-110	61.05	4.0%	165-170	20.82	1.3%
50-55	58.42	3.8%	110-115	64.28	4.2%	170-175	13.33	0.9%
55-60	63.83	4.1%	115-120	64.03	4.1%	175-180	4.58	0.3%

Zone	Lumens	% of Luminaire
0-40	220	14.2%
0-60	440	28.5%
0-90	787	51.0%
90-180	758	49.0%



Candela Tabulation
Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
	0	198.9	198.9	198.9	198.9	198.9	198.9	198.9	198.9	198.9	198.9	198.9	198.9	198.9	198.9	198.9
	5	195.9	197.1	198.0	197.5	196.0	197.5	198.0	197.1	195.9	197.1	198.0	197.5	196.0	197.5	198.0
	10	185.4	188.8	193.1	194.1	193.1	194.1	193.1	188.8	185.4	188.8	193.1	194.1	193.1	194.1	193.1
	15	158.3	164.9	180.9	189.5	189.2	189.5	180.9	164.9	158.3	164.9	180.9	189.5	189.2	189.5	180.9
	20	139.9	142.9	157.8	181.6	183.4	181.6	157.8	142.9	139.9	142.9	157.8	181.6	183.4	181.6	157.8
	25	135.9	134.2	137.6	168.1	174.7	168.1	137.6	134.2	135.9	134.2	137.6	168.1	174.7	168.1	137.6
	30	135.4	133.4	126.4	149.6	164.4	149.6	126.4	133.4	135.4	133.4	126.4	149.6	164.4	149.6	126.4
	35	134.9	131.8	123.0	129.8	153.6	129.8	123.0	131.8	134.9	131.8	123.0	129.8	153.6	129.8	123.0
	40	140.3	131.4	118.7	112.3	140.9	112.3	118.7	131.4	140.3	131.4	118.7	112.3	140.9	112.3	118.7
	45	161.8	143.2	114.2	98.9	126.9	98.9	114.2	143.2	161.8	143.2	114.2	98.9	126.9	98.9	114.2
	50	191.4	170.3	114.9	89.6	110.8	89.6	114.9	170.3	191.4	170.3	114.9	89.6	110.8	89.6	114.9
	55	204.9	188.5	127.7	81.3	93.9	81.3	127.7	188.5	204.9	188.5	127.7	81.3	93.9	81.3	127.7
	60	209.3	194.5	144.4	72.2	75.8	72.2	144.4	194.5	209.3	194.5	144.4	72.2	75.8	72.2	144.4
	65	207.6	193.7	149.3	65.4	56.4	65.4	149.3	193.7	207.6	193.7	149.3	65.4	56.4	65.4	149.3
	70	196.1	185.7	145.8	67.3	36.0	67.3	145.8	185.7	196.1	185.7	145.8	67.3	36.0	67.3	145.8
	75	169.6	162.1	135.1	66.5	18.0	66.5	135.1	162.1	169.6	162.1	135.1	66.5	18.0	66.5	135.1
	80	146.9	137.2	111.5	58.2	5.5	58.2	111.5	137.2	146.9	137.2	111.5	58.2	5.5	58.2	111.5
	85	138.1	127.2	94.8	44.0	1.8	44.0	94.8	127.2	138.1	127.2	94.8	44.0	1.8	44.0	94.8
	90	137.5	126.7	93.6	38.7	1.6	38.7	93.6	126.7	137.5	126.7	93.6	38.7	1.6	38.7	93.6
	95	138.5	127.5	94.9	42.7	2.0	42.7	94.9	127.5	138.5	127.5	94.9	42.7	2.0	42.7	94.9
	100	146.0	135.6	107.1	56.9	5.6	56.9	107.1	135.6	146.0	135.6	107.1	56.9	5.6	56.9	107.1
	105	162.8	154.1	129.1	64.9	17.9	64.9	129.1	154.1	162.8	154.1	129.1	64.9	17.9	64.9	129.1
	110	184.4	175.7	141.5	64.8	35.5	64.8	141.5	175.7	184.4	175.7	141.5	64.8	35.5	64.8	141.5
	115	198.5	186.3	144.2	62.8	55.2	62.8	144.2	186.3	198.5	186.3	144.2	62.8	55.2	62.8	144.2
	120	201.0	186.9	137.5	69.4	73.9	69.4	137.5	186.9	201.0	186.9	137.5	69.4	73.9	69.4	137.5
	125	194.9	179.0	122.1	78.1	91.5	78.1	122.1	179.0	194.9	179.0	122.1	78.1	91.5	78.1	122.1
	130	177.8	159.5	109.8	86.3	107.8	86.3	109.8	159.5	177.8	159.5	109.8	86.3	107.8	86.3	109.8
	135	154.6	137.9	109.0	96.0	123.4	96.0	109.0	137.9	154.6	137.9	109.0	96.0	123.4	96.0	109.0
	140	135.0	125.4	113.4	109.5	137.5	109.5	113.4	125.4	135.0	125.4	113.4	109.5	137.5	109.5	113.4
	145	127.4	124.6	117.2	124.5	149.2	124.5	117.2	124.6	127.4	124.6	117.2	124.5	149.2	124.5	117.2
	150	128.0	126.5	122.1	140.8	159.8	140.8	122.1	126.5	128.0	126.5	122.1	140.8	159.8	140.8	122.1
	155	129.6	128.9	133.9	157.2	169.6	157.2	133.9	128.9	129.6	128.9	133.9	157.2	169.6	157.2	133.9
	160	136.8	139.3	150.4	171.0	178.1	171.0	150.4	139.3	136.8	139.3	150.4	171.0	178.1	171.0	150.4
	165	153.8	157.1	168.6	180.9	184.8	180.9	168.6	157.1	153.8	157.1	168.6	180.9	184.8	180.9	168.6
	170	172.5	177.2	183.1	187.5	189.3	187.5	183.1	177.2	172.5	177.2	183.1	187.5	189.3	187.5	183.1
	175	187.4	189.6	190.7	191.3	191.7	191.3	190.7	189.6	187.4	189.6	190.7	191.3	191.7	191.3	190.7
	180	192.8	192.8	192.8	192.8	192.8	192.8	192.8	192.8	192.8	192.8	192.8	192.8	192.8	192.8	192.8

Average Luminance (cd/m²)

Vertical Angle (Degrees)	Horizontal Angle (Degrees)			
		0	45	90
	0	43620	43620	43620
	45	50170	35400	39340
	55	78330	48820	35880
	65	107700	77460	29270
	75	143700	114500	15250
	85	347500	238500	4649



Coefficients of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance 20%																		
Ceiling Cavity Reflectance	80				70				50			30			10			0
Wall Reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)	** Values are expressed as percent of total lumen output delivered to the task surface **																	
0	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57	51
1	95	89	84	80	87	82	78	74	69	66	62	57	54	52	45	44	42	37
2	85	76	69	62	78	70	63	58	58	53	49	48	44	41	38	35	33	28
3	77	66	57	50	70	60	53	47	50	45	40	41	37	33	33	29	27	22
4	70	58	49	42	64	53	45	39	44	38	33	36	31	27	29	25	22	18
5	64	51	42	35	58	47	39	33	39	33	28	32	27	23	25	22	19	15
6	59	45	36	30	53	42	34	28	35	29	24	29	24	20	23	19	16	13
7	54	41	32	26	49	38	30	24	32	25	21	26	21	17	21	17	14	11
8	50	37	29	23	46	34	27	21	29	23	18	24	19	15	19	15	12	10
9	47	34	26	20	43	31	24	19	26	20	16	22	17	14	18	14	11	9
10	43	31	23	18	40	28	22	17	24	19	15	20	16	12	16	13	10	8

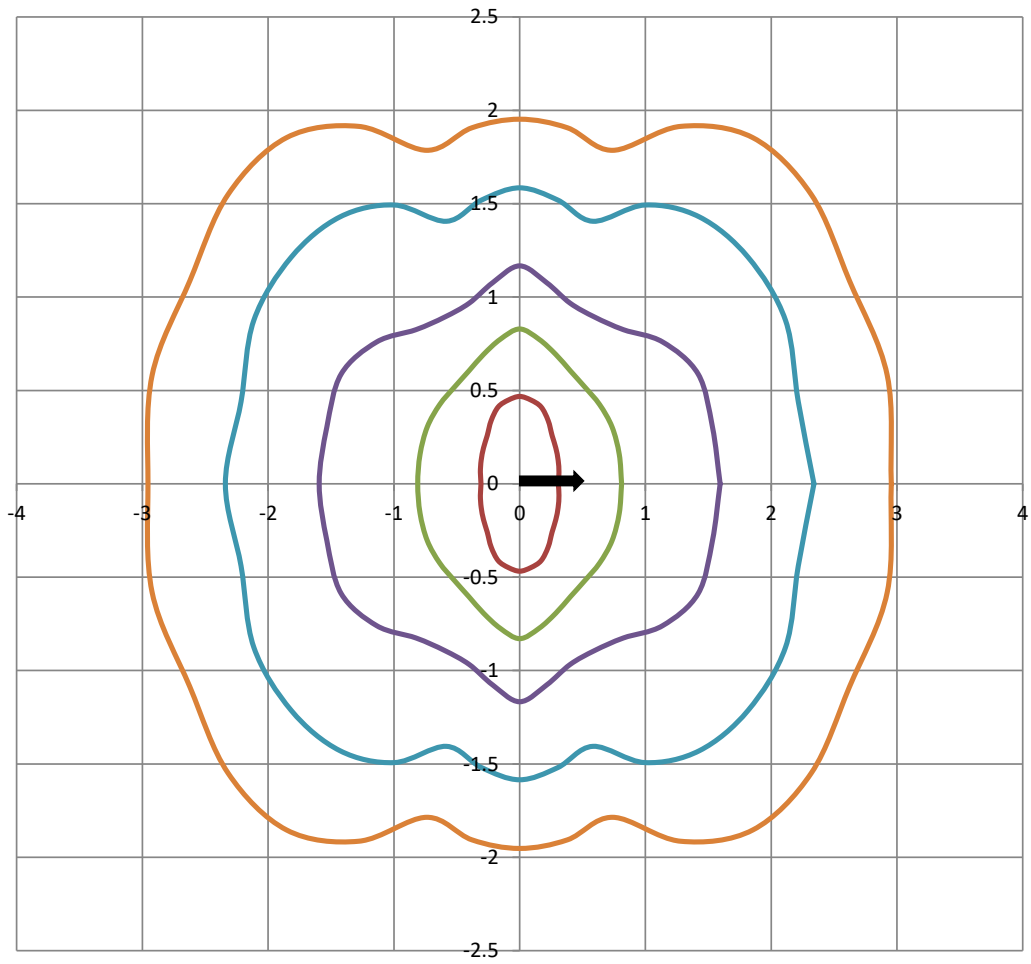
Beam and Field Information	
CIE Type:	Direct/Indirect
Center Beam Intensity:	198.9 Candela
Central Cone Intensity:	198 Candela
Beam Flux:	1325.1 Lumens
Beam Angle (0-180):	N/A Degrees
Beam Angle (90-270):	106.8 Degrees
Field Angle (0-180):	N/A Degrees
Field Angle (90-270):	148.8 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		12.4	4.22
6.00		5.53	6.32
8.00		3.11	8.43
10.0		1.99	10.5
12.0		1.38	12.6
14.0		1.01	14.8
16.0		0.777	16.9



ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

