

LIGHT LABORATORY, INC.

8165 E Kaiser Blvd. Anaheim, CA 92808

SHT 1 OF 1

Test #: L0210-2902

Date: 03/02/2010

Luminaire Photometric Performance LM-79-2008

Manufacturer:	ATEX AMERICA,INC
Model Number:	RL16-090AL-01

Total Lumens:	220.66
Input Power (W):	7.08
Input Current (Amp):	79.17mA
Input Power Factor:	0.90
Efficacy:	31.17
Color Rendering Index (CRI):	72
Correlated Color Temperature (CCT):	2881
Chromaticity Ordinate x:	0.453
Chromaticity Ordinate y:	0.421

*Test data documentation on file and available upon request.

*All results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

REV.	LOG NUMBER	REVISION DESCRIPTION	REVISION BY	CHECKED BY	APPROVED BY	DATE
A					JS	03/02/10

**IES INDOOR REPORT
PHOTOMETRIC FILENAME : L02102902.IES**

DESCRIPTION INFORMATION (From Photometric File)

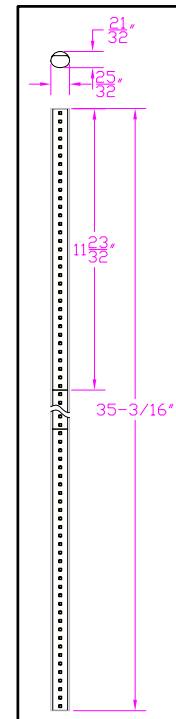
IESNA:LM-63-2002
 [TEST] L0210-2902
 [TESTLAB] LIGHT LABORATORY INC
 [ISSUEDATE] 3/2/2010
 [MANUFAC] ATEX AMERICA,INC
 [LUMCAT] RL16-090AL-01
 [LUMINAIRE] 35-3/16"L. X 25/32"W. X 21/32"H. LED LUMINAIRE
 [MORE] THREE MODULES, EACH MODULE HAS 33 WARM WHITE LEDS
 [MORE] CLEAR ACRYLIC LENS
 [LAMPPOSITION] 0,0
 [LAMPCAT] WARM WHITE LEDS
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
 [_INPUT] 100VAC, 7.08W
 [_TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lumens	N.A. (absolute)
Luminaire Lumens	221
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	31
Total Luminaire Watts	7.08
Ballast Factor	1.00
CIE Type	Direct
Spacing Criteria (0-180)	1.24
Spacing Criteria (90-270)	1.22
Spacing Criteria (Diagonal)	1.32
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	2.93 ft
Luminous Width (90-270)	0.78 ft
Luminous Height	0.03 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	359	339	336
55	320	296	293
65	252	221	213
75	144	119	114
85	58	77	64



IES INDOOR REPORT
PHOTOMETRIC FILENAME : L02102902.IES

CANDELA TABULATION

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
0	86.4	86.4	86.4	86.4	86.4
5	85.9	85.9	85.7	85.8	86.1
15	82.6	82.1	82.1	81.9	81.7
25	75.9	75.4	75.2	75.2	75.1
35	66.6	66.2	65.5	65.0	64.8
45	54.5	53.8	52.7	52.6	52.5
55	39.6	39.0	37.8	37.6	37.7
65	23.1	22.3	21.3	20.8	20.7
75	8.2	7.7	7.4	7.3	7.2
85	1.2	1.9	2.0	1.8	1.7
90	0.8	1.1	1.4	1.4	1.3
95	0.7	0.9	1.2	1.1	1.1
105	0.7	0.8	0.9	0.9	1.0
115	0.7	0.8	0.8	0.8	0.8
125	0.7	0.8	0.7	0.7	0.7
135	0.7	0.8	0.8	0.7	0.7
145	0.7	0.7	0.8	0.8	0.8
155	0.7	0.7	0.8	0.8	0.8
165	0.7	0.7	0.8	0.8	0.8
175	0.8	0.8	0.8	0.8	0.8
180	0.0	0.0	0.0	0.0	0.0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L02102902.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	47.5	N.A.	21.5
0-40	86.09	N.A.	39
0-60	166.24	N.A.	75.3
0-90	215.44	N.A.	97.6
90-120	2.49	N.A.	1.1
90-130	3.2	N.A.	1.5
90-150	4.35	N.A.	2
90-180	5.22	N.A.	2.4
0-180	220.66	N.A.	100

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	2.06
10-20	15.97
20-30	29.48
30-40	38.59
40-50	41.8
50-60	38.35
60-70	28.38
70-80	14.97
80-90	5.85
90-100	.62
100-110	1.02
110-120	.85
120-130	.72
130-140	.62
140-150	.53
150-160	.42
160-170	.29
170-180	.16

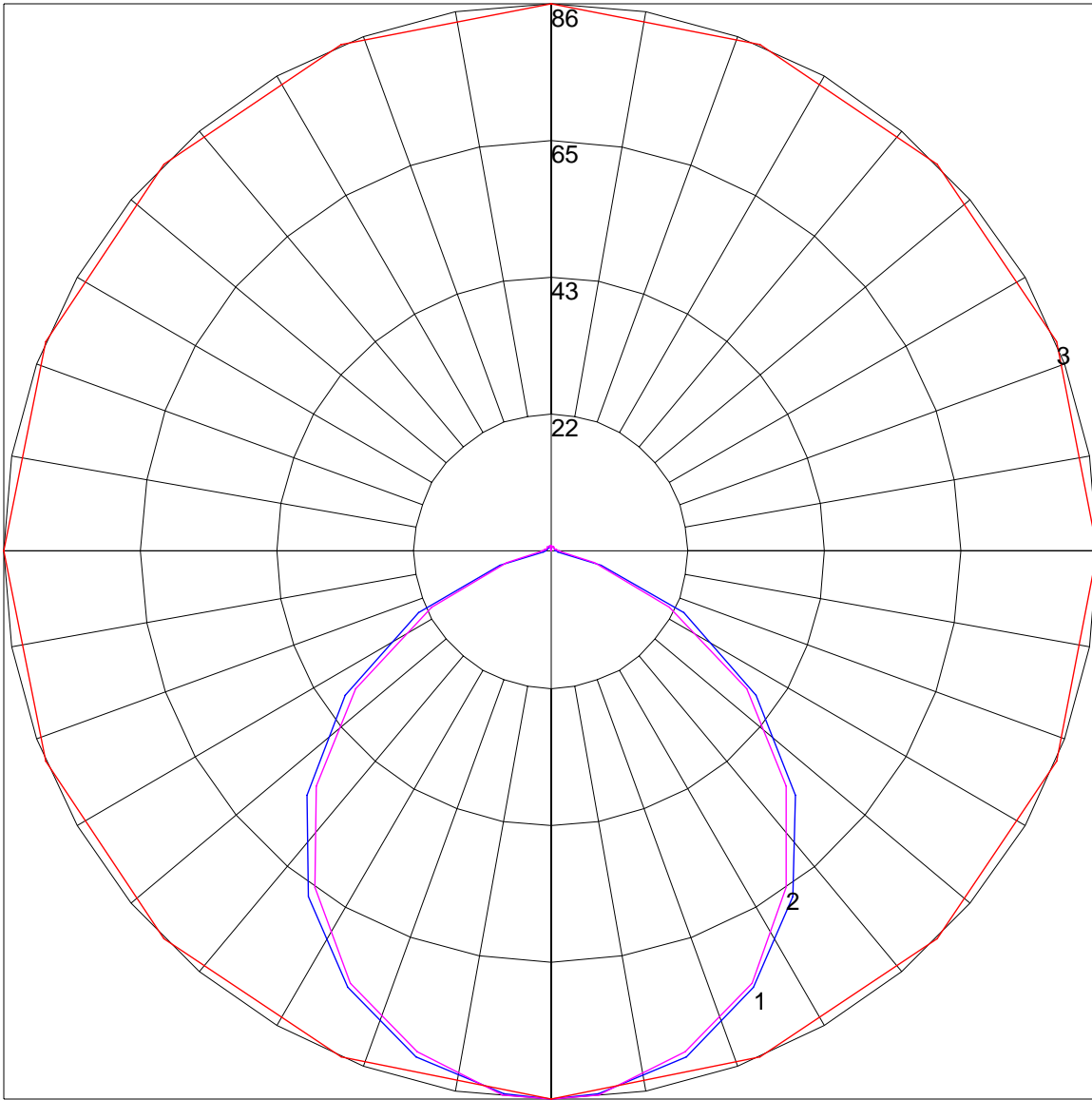
IES INDOOR REPORT
PHOTOMETRIC FILENAME : L02102902.IES

COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

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
0	118	118	118	118	115	115	115	115	110	110	110	104	104	104	100	100	100	97
1	107	102	98	94	104	100	96	92	95	92	89	91	88	85	87	85	83	80
2	97	88	81	75	94	86	80	74	82	77	72	79	74	70	75	72	68	66
3	88	77	68	62	85	75	67	61	72	65	60	69	63	58	66	61	57	55
4	80	68	58	51	78	66	58	51	63	56	50	61	54	49	58	53	48	46
5	73	60	50	44	71	59	50	43	56	48	42	54	47	42	52	46	41	39
6	67	53	44	37	65	52	43	37	50	42	37	48	41	36	46	40	36	33
7	62	48	39	32	60	47	38	32	45	37	32	44	37	31	42	36	31	29
8	57	43	35	28	56	43	34	28	41	33	28	40	33	28	38	32	27	25
9	53	39	31	25	52	39	31	25	37	30	25	36	29	25	35	29	24	22
10	50	36	28	22	48	35	28	22	34	27	22	33	27	22	32	26	22	20

POLAR GRAPH



Maximum Candela = 86.4 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.) : BLUE
2 - Vertical Plane Through Horizontal Angles (90 - 270) : MAGENTA
3 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.) : RED

LIGHT LABORATORY, INC.

8165 E Kaiser Blvd. Anaheim, CA 92808

SHT 1 OF 1

Test #: L0210-2901

Date: 03/02/2010

Luminaire Photometric Performance LM-79-2008

Manufacturer:	ATEX AMERICA,INC
Model Number:	RL16-090AN-01

Total Lumens:	406.60
Input Power (W):	7.92
Input Current (Amp):	88.21mA
Input Power Factor:	0.90
Efficacy:	51.34
Color Rendering Index (CRI):	77.7
Correlated Color Temperature (CCT):	4615
Chromaticity Ordinate x:	0.358
Chromaticity Ordinate y:	0.368

*Test data documentation on file and available upon request.

*All results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

REV.	LOG NUMBER	REVISION DESCRIPTION	REVISION BY	CHECKED BY	APPROVED BY	DATE
A					JS	03/02/10

**IES INDOOR REPORT
PHOTOMETRIC FILENAME : L02102901.IES**

DESCRIPTION INFORMATION (From Photometric File)

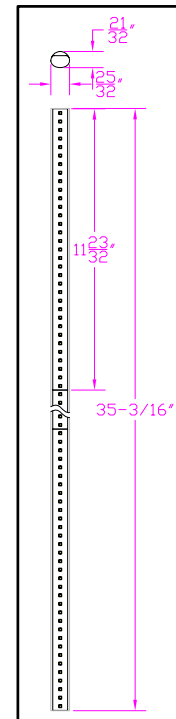
IESNA:LM-63-2002
 [TEST] L0210-2901
 [TESTLAB] LIGHT LABORATORY INC
 [ISSUEDATE] 3/2/2010
 [MANUFAC] ATEX AMERICA,INC
 [LUMCAT] RL16-090AN-01
 [LUMINAIRE] 35-3/16"L. X 25/32"W. X 21/32"H. LED LUMINAIRE
 [MORE] THREE MODULES, EACH MODULE HAS 33 COOL WHITE LEDS
 [MORE] CLEAR ACRYLIC LENS
 [LAMPPOSITION] 0,0
 [LAMPCAT] COOL WHITE LEDS
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
 [_INPUT] 100VAC, 7.92W
 [_TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lumens	N.A. (absolute)
Luminaire Lumens	407
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	51
Total Luminaire Watts	7.92
Ballast Factor	1.00
CIE Type	Direct
Spacing Criteria (0-180)	1.24
Spacing Criteria (90-270)	1.22
Spacing Criteria (Diagonal)	1.34
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	2.93 ft
Luminous Width (90-270)	0.78 ft
Luminous Height	0.03 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	659	623	617
55	592	540	543
65	471	410	403
75	275	229	221
85	111	155	131



IES INDOOR REPORT
PHOTOMETRIC FILENAME : L02102901.IES

CANDELA TABULATION

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
0	157.0	157.0	157.0	157.0	157.0
5	156.2	156.1	156.0	156.1	156.4
15	150.2	149.8	149.9	149.9	150.0
25	138.3	138.1	137.9	137.6	137.3
35	121.9	121.7	120.2	119.4	119.0
45	100.0	99.0	96.9	96.1	96.3
55	73.2	72.1	69.1	69.5	69.8
65	43.2	41.2	39.5	38.8	39.2
75	15.7	15.1	14.2	14.5	13.9
85	2.3	3.8	4.0	3.7	3.5
90	1.4	2.2	2.7	2.7	2.5
95	1.4	1.7	2.2	2.2	2.1
105	1.3	1.5	1.6	1.8	1.7
115	1.3	1.4	1.4	1.5	1.5
125	1.3	1.4	1.4	1.4	1.4
135	1.3	1.4	1.4	1.4	1.3
145	1.3	1.3	1.4	1.4	1.4
155	1.3	1.3	1.4	1.5	1.5
165	1.3	1.4	1.4	1.4	1.4
175	1.4	1.4	1.4	1.4	1.4
180	0.0	0.0	0.0	0.0	0.0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L02102901.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	86.75	N.A.	21.3
0-40	157.47	N.A.	38.7
0-60	304.71	N.A.	74.9
0-90	396.91	N.A.	97.6
90-120	4.67	N.A.	1.1
90-130	6	N.A.	1.5
90-150	8.13	N.A.	2
90-180	9.69	N.A.	2.4
0-180	406.6	N.A.	100

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	3.74
10-20	29.1
20-30	53.9
30-40	70.72
40-50	76.73
50-60	70.51
60-70	52.51
70-80	28.21
80-90	11.48
90-100	1.19
100-110	1.92
110-120	1.56
120-130	1.33
130-140	1.16
140-150	.96
150-160	.76
160-170	.52
170-180	.28

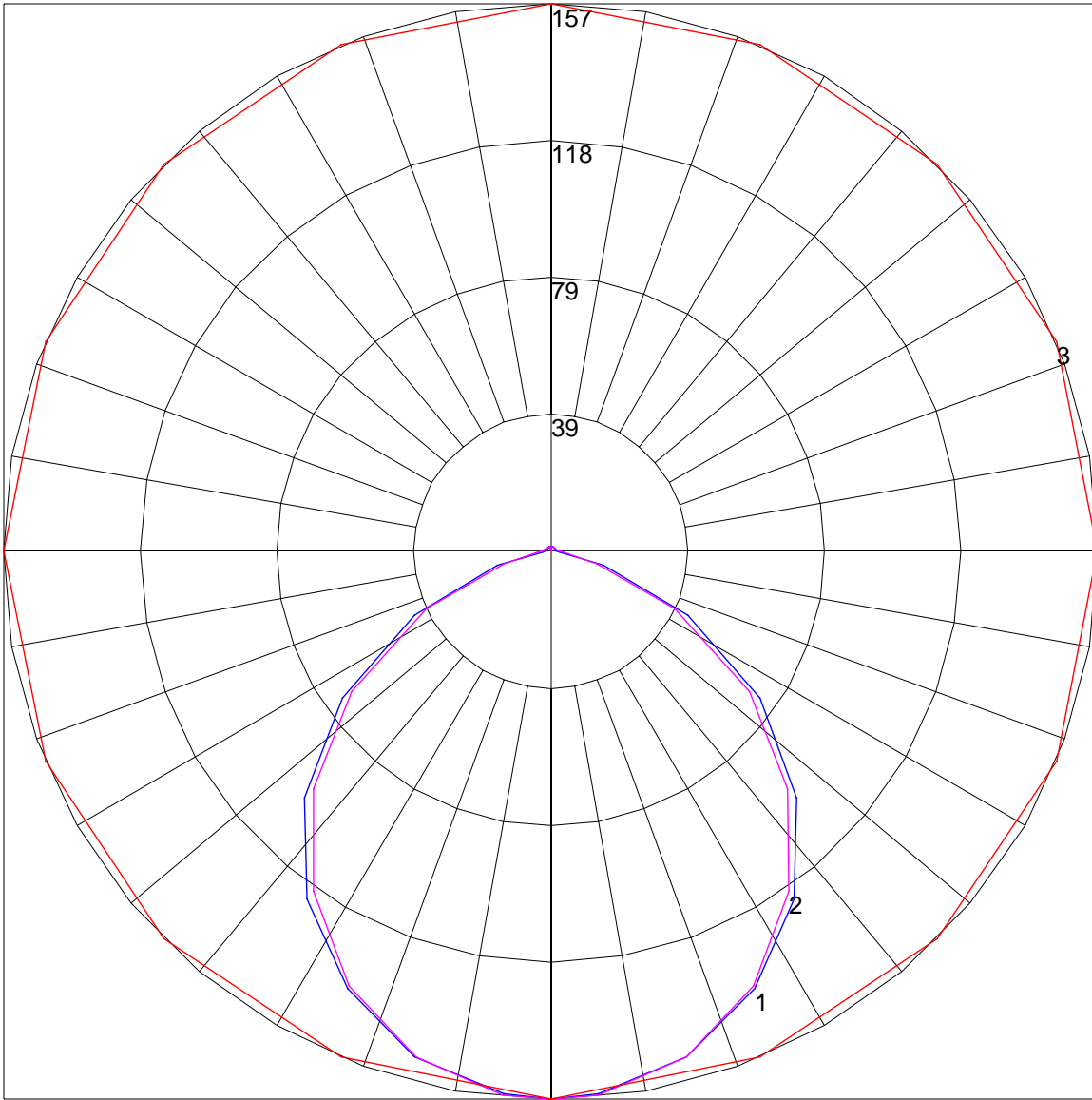
IES INDOOR REPORT
PHOTOMETRIC FILENAME : L02102901.IES

COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

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
0	118	118	118	118	115	115	115	115	110	110	110	105	105	105	100	100	100	98
1	107	102	98	94	104	100	96	92	95	92	88	91	88	85	87	84	82	80
2	97	88	81	75	94	86	80	74	82	77	72	79	74	70	75	71	68	66
3	88	77	68	61	85	75	67	61	72	65	59	69	63	58	66	61	57	54
4	80	67	58	51	77	66	57	51	63	56	50	60	54	49	58	52	48	45
5	73	60	50	43	71	58	50	43	56	48	42	54	47	42	52	46	41	39
6	67	53	44	37	65	52	43	37	50	42	36	48	41	36	46	40	35	33
7	62	48	39	32	60	47	38	32	45	37	32	43	36	31	42	36	31	29
8	57	43	34	28	56	42	34	28	41	33	28	39	33	27	38	32	27	25
9	53	39	31	25	52	39	30	25	37	30	25	36	29	24	35	29	24	22
10	50	36	28	22	48	35	28	22	34	27	22	33	26	22	32	26	22	20

POLAR GRAPH



Maximum Candela = 157 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.) : BLUE
2 - Vertical Plane Through Horizontal Angles (90 - 270) : MAGENTA
3 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.) : RED

LIGHT LABORATORY, INC.

8165 E Kaiser Blvd. Anaheim, CA 92808

SHT 1 OF 1

Test #: L0210-2903

Date: 03/02/2010

Luminaire Photometric Performance LM-79-2008

Manufacturer:	ATEX AMERICA,INC
Model Number:	RL16-090AW-01

Total Lumens:	265.75
Input Power (W):	7.00
Input Current (Amp):	78.94mA
Input Power Factor:	0.89
Efficacy:	37.96
Color Rendering Index (CRI):	78.1
Correlated Color Temperature (CCT):	3936
Chromaticity Ordinate x:	0.386
Chromaticity Ordinate y:	0.388

*Test data documentation on file and available upon request.

*All results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

REV.	LOG NUMBER	REVISION DESCRIPTION	REVISION BY	CHECKED BY	APPROVED BY	DATE
A					JS	03/02/10

**IES INDOOR REPORT
PHOTOMETRIC FILENAME : L02102903.IES**

DESCRIPTION INFORMATION (From Photometric File)

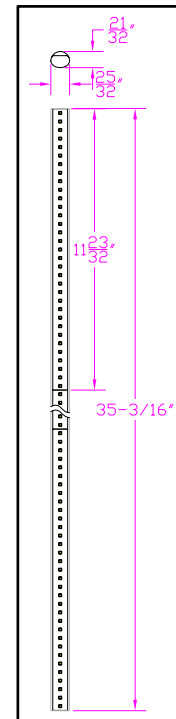
IESNA:LM-63-2002
 [TEST] L0210-2903
 [TESTLAB] LIGHT LABORATORY INC
 [ISSUEDATE] 3/1/2010
 [MANUFAC] ATEX AMERICA,INC
 [LUMCAT] RL16-090AW-01
 [LUMINAIRE] 35-3/16"L. X 25/32"W. X 21/32"H. LED LUMINAIRE
 [MORE] THREE MODULES, EACH MODULE HAS 33 NEURAL WHITE LEDS
 [MORE] CLEAR ACRYLIC LENS
 [LAMPPOSITION] 0,0
 [LAMPCAT] NEUTRAL WHITE LEDS
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
 [_INPUT] 100VAC, 7.00W
 [_TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lumens	N.A. (absolute)
Luminaire Lumens	266
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	38
Total Luminaire Watts	7
Ballast Factor	1.00
CIE Type	Direct
Spacing Criteria (0-180)	1.26
Spacing Criteria (90-270)	1.22
Spacing Criteria (Diagonal)	1.34
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	2.93 ft
Luminous Width (90-270)	0.78 ft
Luminous Height	0.03 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	433	408	408
55	389	357	355
65	306	265	254
75	172	139	138
85	68	97	79



IES INDOOR REPORT
PHOTOMETRIC FILENAME : L02102903.IES

CANDELA TABULATION

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
0	102.9	102.9	102.9	102.9	102.9
5	102.4	102.2	102.3	102.4	102.6
15	98.4	98.4	98.4	98.2	98.3
25	91.2	91.1	90.5	90.5	90.4
35	80.4	79.9	79.1	78.1	78.2
45	65.8	65.2	63.5	63.8	63.7
55	48.1	47.3	45.7	45.5	45.6
65	28.1	26.6	25.6	25.0	24.7
75	9.8	9.1	8.6	8.8	8.7
85	1.4	2.3	2.5	2.3	2.1
90	0.9	1.3	1.7	1.7	1.6
95	0.9	1.1	1.4	1.4	1.3
105	0.9	1.0	1.0	1.1	1.1
115	0.9	0.9	0.9	0.9	0.9
125	0.8	0.9	0.9	0.9	0.9
135	0.8	0.9	0.9	0.9	0.9
145	0.8	0.9	0.9	0.9	0.9
155	0.9	0.9	0.9	0.9	0.9
165	0.9	0.9	0.9	0.9	0.9
175	0.9	0.9	0.9	0.9	0.9
180	0.0	0.0	0.0	0.0	0.0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L02102903.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	56.95	N.A.	21.4
0-40	103.45	N.A.	38.9
0-60	200.35	N.A.	75.4
0-90	259.56	N.A.	97.7
90-120	2.97	N.A.	1.1
90-130	3.81	N.A.	1.4
90-150	5.18	N.A.	1.9
90-180	6.19	N.A.	2.3
0-180	265.75	N.A.	100

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	2.45
10-20	19.08
20-30	35.41
30-40	46.5
40-50	50.48
50-60	46.42
60-70	34.26
70-80	17.93
80-90	7.03
90-100	.75
100-110	1.23
110-120	.99
120-130	.85
130-140	.74
140-150	.62
150-160	.49
160-170	.34
170-180	.18

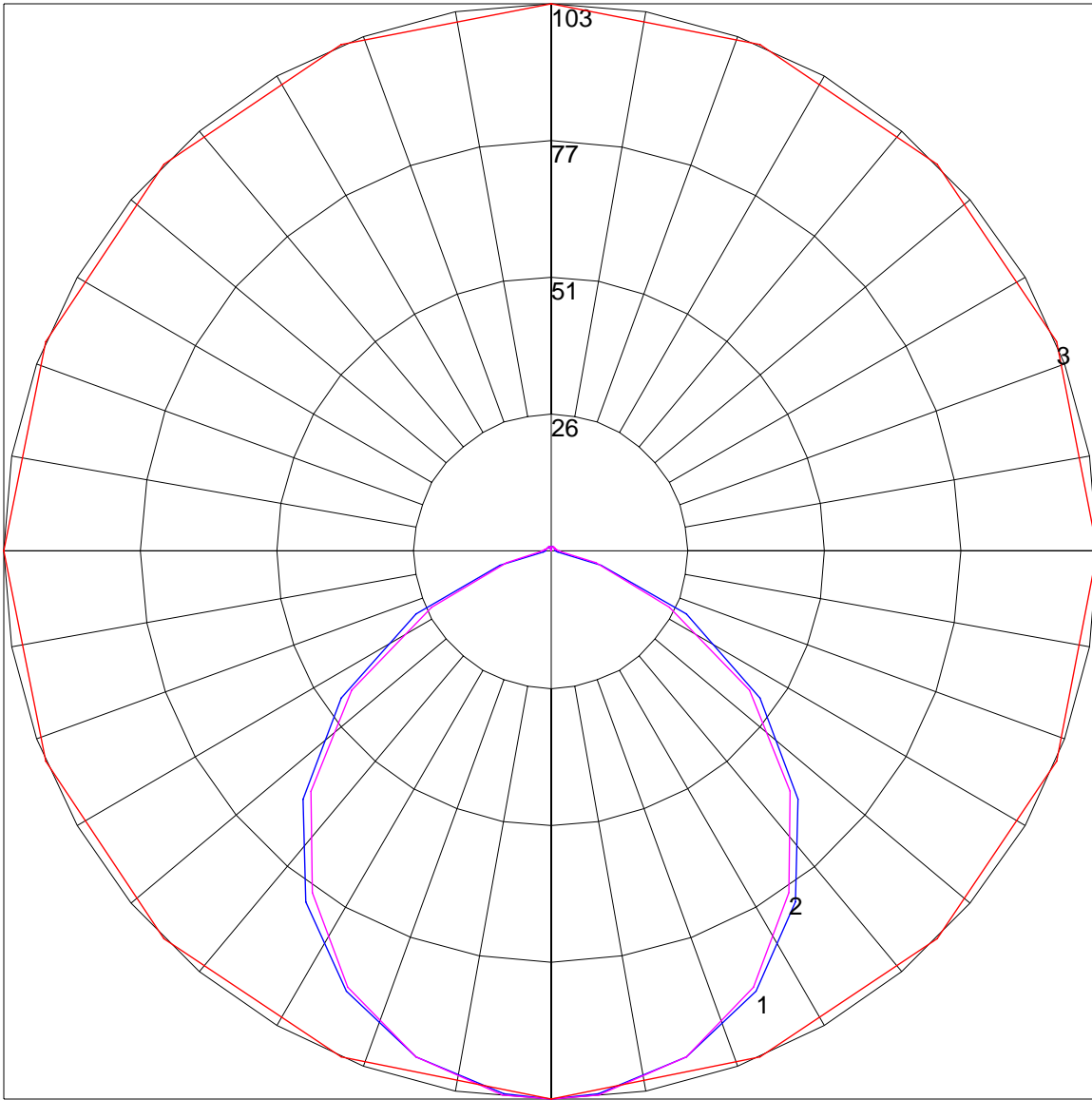
IES INDOOR REPORT
PHOTOMETRIC FILENAME : L02102903.IES

COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

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	118	118	118	118	118	115	115	115	115	110	110	110	105	105	105	100	100	100	98
1	107	102	98	94	94	104	100	96	92	95	92	89	91	88	86	87	85	83	80
2	97	89	81	75	94	86	80	74	82	77	72	79	74	70	75	72	68	66	66
3	88	77	68	62	85	75	67	61	72	65	60	69	63	58	66	61	57	55	55
4	80	68	58	51	78	66	58	51	63	56	50	61	54	49	58	53	48	46	46
5	73	60	50	44	71	59	50	43	56	48	42	54	47	42	52	46	41	39	39
6	67	53	44	37	65	52	43	37	50	42	37	48	41	36	46	40	36	33	33
7	62	48	39	32	60	47	38	32	45	37	32	44	37	31	42	36	31	29	29
8	57	43	35	28	56	43	34	28	41	33	28	40	33	28	38	32	27	25	25
9	53	39	31	25	52	39	31	25	37	30	25	36	29	24	35	29	24	22	22
10	50	36	28	22	48	35	28	22	34	27	22	33	27	22	32	26	22	20	20

POLAR GRAPH



Maximum Candela = 102.9 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.) : BLUE
2 - Vertical Plane Through Horizontal Angles (90 - 270) : MAGENTA
3 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.) : RED