

LIGHT LABORATORY, INC.

8165 E Kaiser Blvd. Anaheim, CA 92808

SHT 1 OF 7

Test #: L09111102

Date: 10/5/2011

Luminaire Photometric Performance LM-79-2008

Manufacturer:	ATEX CO., LTD
Model Number:	TL10-090AN-11

Total Lumens:	541.25
Input Power (W):	10.96
Input Current (Amp):	0.46
Input Power Factor:	N.A.
Efficacy:	49.38
Color Rendering Index (CRI):	88.55
Correlated Color Temperature (K):	4973
Chromaticity Ordinate x:	0.3455
Chromaticity Ordinate y:	0.3482

*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	10/5/11

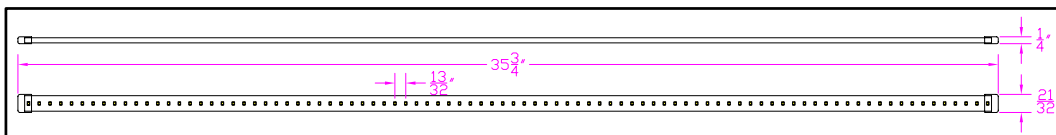
**IES INDOOR REPORT
PHOTOMETRIC FILENAME : L09111102R01.IES**

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L09111102R01
[TESTLAB] LIGHT LABORATORY, INC.
[ISSUE DATE] 10/5/2011
[MANUFAC] ATEX CO., LTD
[LUMCAT] TL10-090AN-11
[LUMINAIRE] 35-3/4"L. X 21/32"W. X 1/4"H. LED STRIP
[MORE] FIVE MODULES, EACH MODULE HAS 18 COOL WHITE LEDS
[MORE] 13/32" SPACING, TOTAL 90 LEDS
[LAMP POSITION] 0,0
[LAMP CAT] COOL WHITE LED
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[_POWER SUPPLY] 24VDC CONSTANT VOLTAGE SOURCE
[_INPUT] 24VDC, 10.96W
[_TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	541
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	49
Total Luminaire Watts	10.96
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.26
Spacing Criterion (90-270)	1.28
Spacing Criterion (Diagonal)	1.40
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	2.94 ft
Luminous Width (90-270)	0.05 ft
Luminous Height	0.01 ft



IES INDOOR REPORT
PHOTOMETRIC FILENAME : L0911110R012.IES

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	11407	10464	10559
55	11088	10333	10233
65	10311	9759	8903
75	8677	7749	6767
85	5187	4387	4049

**IES INDOOR REPORT
PHOTOMETRIC FILENAME : L09111102R01.IES**

CANDELA TABULATION

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
0	169.64	169.64	169.64	169.64	169.64
5	168.57	168.97	168.72	168.86	168.80
10	166.49	166.43	166.17	166.44	166.79
15	162.39	162.61	162.05	162.53	162.61
20	156.81	156.45	156.64	157.30	157.18
25	149.94	149.72	150.05	151.07	151.17
30	141.72	141.73	142.36	143.76	144.85
35	132.12	132.84	134.08	136.19	137.84
40	121.79	122.57	124.95	128.33	130.49
45	110.63	111.59	115.69	120.61	122.47
50	98.73	100.09	106.22	112.04	113.27
55	87.36	89.55	97.66	103.08	103.15
60	74.07	77.08	86.85	89.98	89.41
65	60.00	64.04	73.77	74.68	73.49
70	45.56	50.54	58.36	58.08	57.32
75	31.09	36.56	42.13	42.03	41.81
80	18.52	22.31	27.00	27.23	27.21
85	6.42	11.12	13.82	14.91	15.85
90	0.00	5.30	7.89	10.52	11.81
95	0.00	3.93	6.92	9.63	10.30
100	0.00	3.07	5.75	7.03	7.19
105	0.00	2.69	4.67	5.73	6.02
110	0.00	2.68	4.79	6.02	6.48
115	0.00	0.00	6.30	7.80	8.37
120	0.00	0.00	7.46	10.55	11.28
125	0.00	0.00	6.85	11.66	12.93
130	0.00	0.00	4.63	10.30	11.88
135	0.00	0.00	0.00	7.37	9.25
140	0.00	0.00	0.00	3.78	5.25
145	0.00	0.00	0.00	0.00	0.00
150	0.00	0.00	0.00	0.00	0.00
155	0.00	0.00	0.00	0.00	0.00
160	0.00	0.00	0.00	0.00	0.00
165	0.00	0.00	0.00	0.00	0.00
170	0.00	0.00	0.00	0.00	0.00
175	0.00	0.00	0.00	0.00	0.00
180	0.00	0.00	0.00	0.00	0.00

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L09111102R01.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	131.17	N.A.	24.20
0-40	215.39	N.A.	39.80
0-60	390.72	N.A.	72.20
0-90	517.04	N.A.	95.50
90-120	16.13	N.A.	3.00
90-130	21.43	N.A.	4.00
90-150	24.21	N.A.	4.50
90-180	24.21	N.A.	4.50
0-180	541.25	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	16.04
10-20	45.82
20-30	69.32
30-40	84.22
40-50	89.63
50-60	85.70
60-70	68.87
70-80	41.71
80-90	15.73
90-100	6.84
100-110	4.52
110-120	4.77
120-130	5.30
130-140	2.51
140-150	0.27
150-160	0.00
160-170	0.00
170-180	0.00

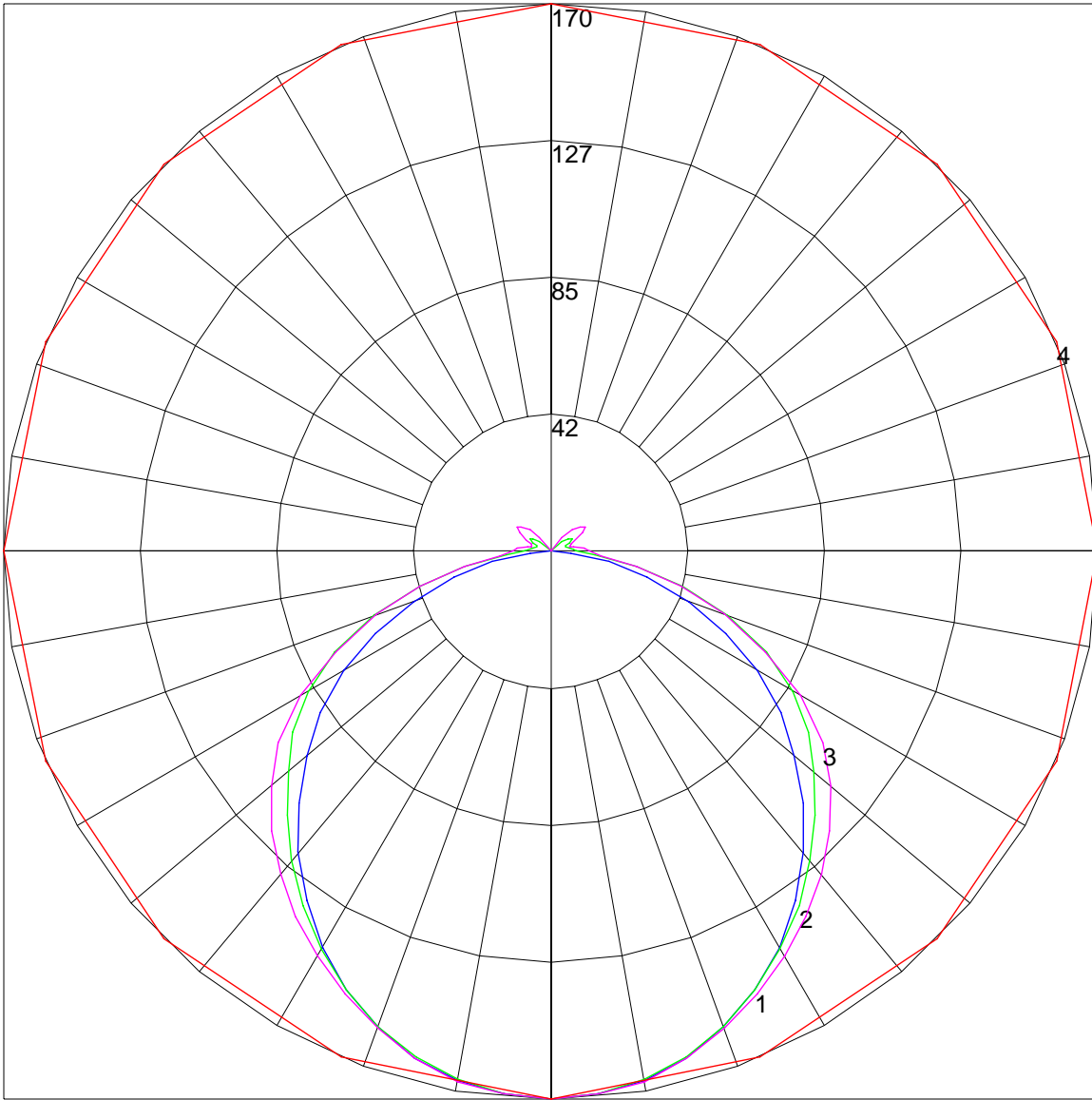
IES INDOOR REPORT
PHOTOMETRIC FILENAME : L09111102R01.IES

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	109	109	109	103	103	103	98	98	98	96
1	107	102	97	93	104	99	95	91	94	91	88	89	87	84	85	83	81	78
2	97	88	81	75	94	86	79	74	82	76	71	78	73	69	74	70	67	64
3	88	77	69	62	85	75	67	61	71	65	59	68	62	58	65	60	56	54
4	80	68	59	52	78	66	58	51	63	56	50	60	54	49	58	52	48	46
5	74	61	51	45	71	59	51	44	57	49	43	54	47	42	52	46	41	39
6	68	54	45	39	66	53	45	38	51	43	38	49	42	37	47	41	36	34
7	63	49	40	34	61	48	40	34	46	39	33	44	38	33	43	37	32	30
8	59	45	36	30	57	44	36	30	42	35	30	41	34	29	39	33	29	27
9	55	41	33	27	53	40	32	27	39	32	27	37	31	26	36	30	26	24
10	51	38	30	25	50	37	30	24	36	29	24	35	28	24	33	28	23	22

POLAR GRAPH



Maximum Candela = 169.64 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 (45 - 225) : GREEN
3 - Vertical Plane Through Horizontal Angles (90 - 270) : MAGENTA
4 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.) : RED

LIGHT LABORATORY, INC.

8165 E Kaiser Blvd. Anaheim, CA 92808

SHT 1 OF 7

Test #: L09111101

Date: 10/5/2011

Luminaire Photometric Performance LM-79-2008

Manufacturer:	ATEX CO., LTD
Model Number:	TL10-090AL-11

Total Lumens:	467.88
Input Power (W):	10.95
Input Current (Amp):	0.46
Input Power Factor:	N.A.
Efficacy:	42.73
Color Rendering Index (CRI):	87.32
Correlated Color Temperature (K):	2839
Chromaticity Ordinate x:	0.4464
Chromaticity Ordinate y:	0.4032

*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	10/5/11

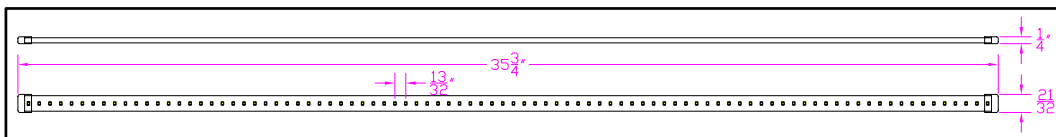
**IES INDOOR REPORT
PHOTOMETRIC FILENAME : L09111101.IES**

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L09111101
[TESTLAB] LIGHT LABORATORY, INC.
[ISSUE DATE] 10/5/2011
[MANUFAC] ATEX CO., LTD
[LUMCAT] TL10-090AL-11
[LUMINAIRE] 35-3/4"L. X 21/32"W. X 1/4"H. LED STRIP
[MORE] FIVE MODULES, EACH MODULE HAS 18 WARM WHITE LEDS
[MORE] 13/32" SPACING, TOTAL 90 LEDS
[LAMP POSITION] 0,0
[LAMPCAT] WARM WHITE LED
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[_POWER SUPPLY] 24VDC CONSTANT VOLTAGE SOURCE
[_INPUT] 24VDC, 10.95W
[_TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	477
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	44
Total Luminaire Watts	10.95
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.26
Spacing Criterion (90-270)	1.36
Spacing Criterion (Diagonal)	1.48
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	2.94 ft
Luminous Width (90-270)	0.05 ft
Luminous Height	0.01 ft



IES INDOOR REPORT
PHOTOMETRIC FILENAME : L09111101.IES

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	9985	9758	9816
55	9933	10023	8936
65	9560	9107	7198
75	8200	6752	5629
85	4581	3787	3923

**IES INDOOR REPORT
PHOTOMETRIC FILENAME : L09111101.IES**

CANDELA TABULATION

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>
0	143.66	143.66	143.66	143.66	143.66
5	142.71	143.04	142.87	143.10	143.02
10	141.00	141.05	141.00	141.53	142.04
15	137.70	138.04	138.11	138.91	139.15
20	133.18	133.43	134.29	135.78	135.97
25	127.67	128.25	129.97	132.00	132.61
30	121.34	122.32	124.95	127.66	129.34
35	113.82	115.62	119.48	123.56	125.32
40	105.73	108.03	113.61	118.97	120.81
45	96.84	99.76	107.88	113.39	113.85
50	87.40	91.03	101.81	104.67	102.79
55	78.26	82.56	94.73	93.52	90.07
60	67.57	72.45	83.54	77.94	74.42
65	55.63	61.43	68.84	61.96	59.42
70	42.92	49.19	52.57	47.27	46.31
75	29.38	35.77	36.71	34.44	34.78
80	19.22	23.10	23.29	23.50	24.38
85	5.67	10.75	11.93	13.78	15.36
90	0.00	4.42	5.88	8.66	10.34
95	0.00	2.94	4.91	7.36	8.37
100	0.00	2.30	4.35	5.93	6.34
105	0.00	1.96	3.42	4.40	4.62
110	0.00	1.80	2.81	3.56	3.79
115	0.00	0.00	2.88	3.44	3.69
120	0.00	0.00	3.43	4.10	4.30
125	0.00	0.00	3.74	5.12	5.38
130	0.00	0.00	2.96	5.69	6.31
135	0.00	0.00	0.00	4.72	5.87
140	0.00	0.00	0.00	2.61	3.60
145	0.00	0.00	0.00	0.00	0.00
150	0.00	0.00	0.00	0.00	0.00
155	0.00	0.00	0.00	0.00	0.00
160	0.00	0.00	0.00	0.00	0.00
165	0.00	0.00	0.00	0.00	0.00
170	0.00	0.00	0.00	0.00	0.00
175	0.00	0.00	0.00	0.00	0.00
180	0.00	0.00	0.00	0.00	0.00

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L09111101.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	112.72	N.A.	23.60
0-40	187.62	N.A.	39.30
0-60	348.51	N.A.	73.10
0-90	461.74	N.A.	96.80
90-120	10.92	N.A.	2.30
90-130	13.41	N.A.	2.80
90-150	15.14	N.A.	3.20
90-180	15.14	N.A.	3.20
0-180	476.88	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	13.59
10-20	39.08
20-30	60.04
30-40	74.90
40-50	82.12
50-60	78.77
60-70	61.78
70-80	37.17
80-90	14.29
90-100	5.37
100-110	3.31
110-120	2.24
120-130	2.50
130-140	1.54
140-150	0.18
150-160	0.00
160-170	0.00
170-180	0.00

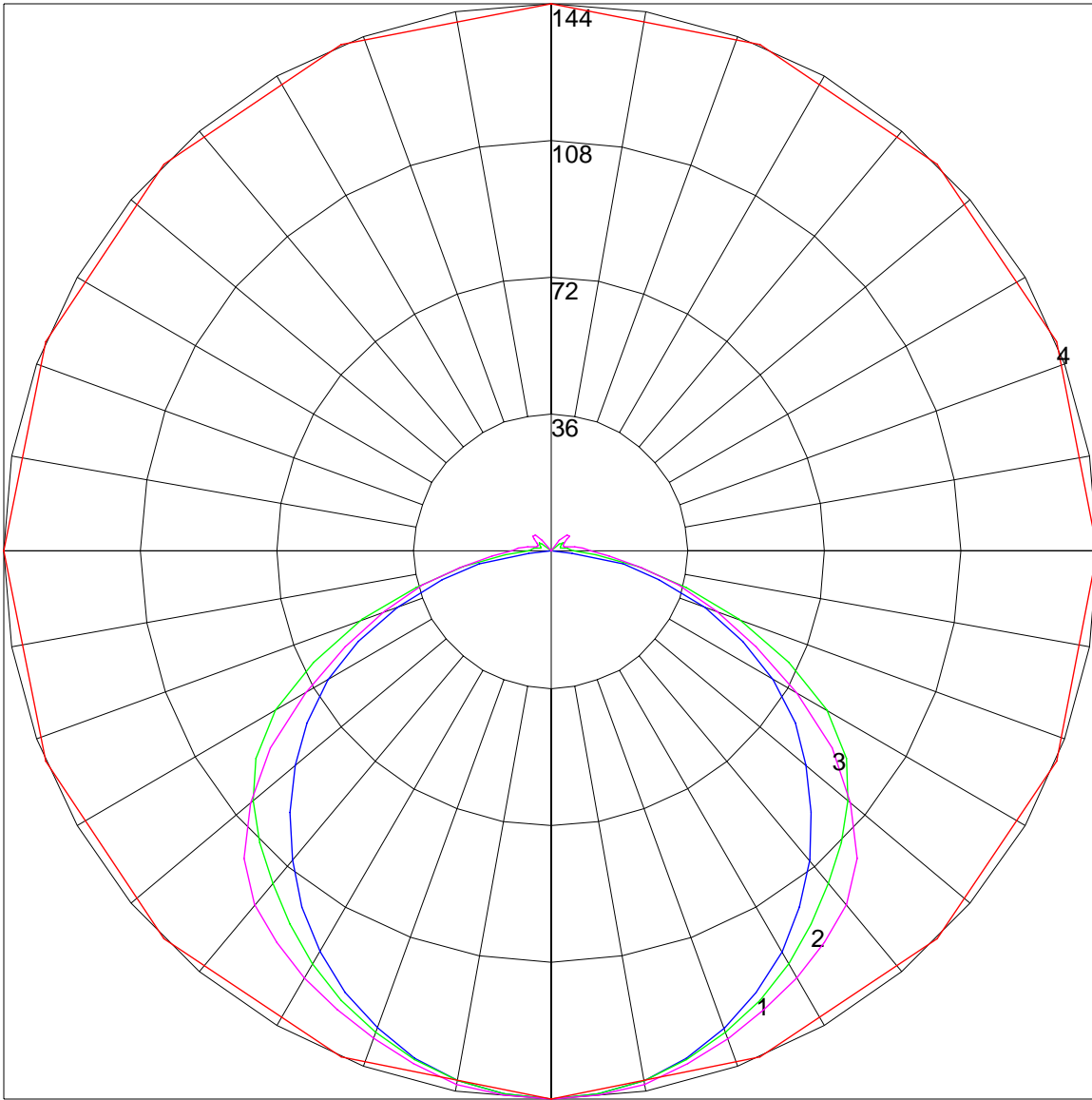
IES INDOOR REPORT
PHOTOMETRIC FILENAME : L09111101.IES

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	118	115	115	115	115	109	109	109	104	104	104	99	99	99	97
1	107	102	97	93	104	99	95	91	95	91	88	90	87	85	86	84	82	79	79
2	97	88	81	75	94	86	79	74	82	76	72	78	74	69	75	71	67	65	65
3	88	77	68	62	85	75	67	61	72	65	59	68	63	58	65	61	57	54	54
4	80	68	59	52	78	66	58	51	63	56	50	61	54	49	58	53	48	46	46
5	74	60	51	44	71	59	50	44	56	49	43	54	47	42	52	46	41	39	39
6	68	54	45	38	66	53	44	38	51	43	37	49	42	37	47	41	36	34	34
7	63	49	40	34	61	48	39	33	46	38	33	44	37	32	43	37	32	30	30
8	58	44	36	30	57	44	35	30	42	35	29	41	34	29	39	33	28	26	26
9	54	41	32	27	53	40	32	27	39	31	26	37	31	26	36	30	26	24	24
10	51	37	29	24	49	37	29	24	36	29	24	34	28	23	33	27	23	21	21

POLAR GRAPH



Maximum Candela = 143.66 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 (45 - 225) : GREEN
3 - Vertical Plane Through Horizontal Angles (90 - 270) : MAGENTA
4 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.) : RED