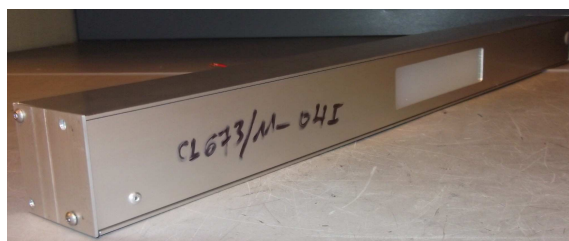


Measurement Report

Company Astra Industries Sal
Luminaire Measurement Astra MLC 12W
Measurement Code 1006A/CL673/11-04I-G1




Approved by DLAB

Approved by Laboratory Technician

Report Date: 26/04/11

Report Attachments	▶ Photometric Measurement Report	☒
	o Intensity Matrix [cd/klm]	☒
	o Polar Diagram	☒
	o Cartesian Diagram	☐
	o Standard Photometric File Formats	Eulumdat ☐
		IESNA ☒
		OXL OxyTech ☐
	▶ Colorimetric Measurement Report	☐
	▶ Emergency Test Report	☐
	▶ Laboratory Parasite Light Evaluation (Background Light Noise Definition)	☐
	▶ Light Pollution Laws Conformity Declaration	☐
	▶ Luminaires Assembly Instructions	☐

Photometric Measurement Report

Measurement Code 1006A/CL673/11-04I-G1

Laboratory Main Manager (DLAB) Mr. Danilo Giannetti
Laboratory Manager Mr. Abdellatif Zaher

Manufacturer Data

Manufacturer Astra Industries SAL
OxyTech Manufacturer Code CL673
Address Dora, St Joseph Road – 80220 - Beirut
Contact Person Mr. Tony Araman

Tested Luminaire Data

Type LED Luminaire
Model Astra MLC 12W
Description Astra MLC 12W
Dimension [mm] 650-60-60
Dimension of Luminous Area [mm] 150-34-0
Led Type and Commercial Trademark Indium Gallium
Ballast Type and Trademark ---
Heat Sink Type and Trademark Double Alfa HS
Ref. Lamp/ Ref. Ballast 1006B/CL673/11-04L

Measurement Data

Measurement Data 22-04-11
Measurement Type C-γ Asymmetrical
Reference Standard UNI EN 11356 del 2010 - UNI EN 13032-1 del 2005
Lamp Stabilization Delay 45 min.
Number of Luminaires Tested 1

Measurement Uncertainty

Source Instability $\leq 1\%$
Efficiency Calculation Uncertainty (LOR) 2.5%
Luminous Intensity Normalised Values 2.5%
Angular Precision in C and γ $\pm 0.05^\circ$

Instruments Data

Goniophotometer Luminaire Rotating System sample as per EN 13032 and CIE121 Standard-
Model T2 Oxytech – ref. Oxy G1. Measurement Distance: 9.11 m
Voltage stabilizers Electro - test model TPS/M 6000
Multimeter Kinetiq Ppa5530
Luxmeter C&G

Measurement of Electrical Parameters

Source Voltage 230 V $\pm 0.2\%$
Harmonic Distortion $< 0,5\%$
Source Frequency 50 Hz $\pm 0.1\%$

Environmental Conditions

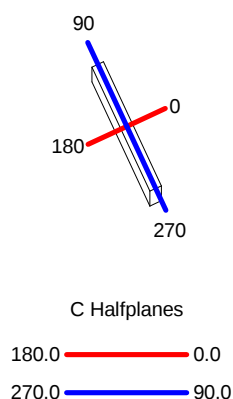
Laboratory Temperature [°C]	25°C ± 1°C
Relative Humidity	60%
Air Movement	< 0,2 m/s

Measurement Notes

- The data displayed on this report are those obtained as per the test described above
- This report concerns only the tested luminaire
- The information contained in the present report/this report is not to be extended in any way to any other sample luminaires different from the one used in this study
- The Measurement Code is shown on the luminaire shield and on the reflector of the luminaire and cannot be deleted

Luminaire			Measurem.			Lamp		
Code	ASTRA MLC 12W		Code	CL673/11-04L		Code	1006B/CL673/11-04L	
Name	ASTRA MLC 12W		Name	ASTRA MLC 12W		Number	1	
Line	Astra Industries 2011		Date	22-04-2011		Position		
Efficiency			100.00%	Coordinate system	C-G	Total Flux	502.68 lm	
Maximum value			464.03 cd/klm	Position	C=60.00 G=1.00	Asymmetrical		
Rectangular Luminaire			Length	650 mm	Width	60 mm	Height	60 mm
Rectangular Luminous Area			Length	150 mm	Width	34 mm	Height	0 mm
Horizontal Luminous Area			0.005100 m2	Emitting area on Plane 180°			0.000000 m2	
Emitting area on Plane 0°			0.000000 m2	Emitting area o n Plane 270°			0.000000 m2	
Emitting area on Plane 90°			0.000000 m2	Glare area at 76°			0.001234 m2	
Symmetry Type			Asymmetrical	Maximum Gamma Angle			90	
Measurement Distance			9.11	Measurement Flux			502.68 lm	
Operator			AZ	Source Voltage			230.20 V	
Temperature			25.00 °C	Source Current			0.08 A	
Humidity			60.00 %	Photocell			Czibula Grundmann	
Notes			Potenza 15.77000FP 0.87106					
Luminaire Lamps								
Line	Code		Name		Fluxlm		Pow.W	Qta
LED 2011	1006B/CL673/11-04L		1006B/CL673/11-04L		502.68		13.00	1
C.I.E.	54 84 97 100 100			D DIN 5040	A40			
F UTE	1.00 D			B NBN	BZ 3 / 0.6 / BZ 4			

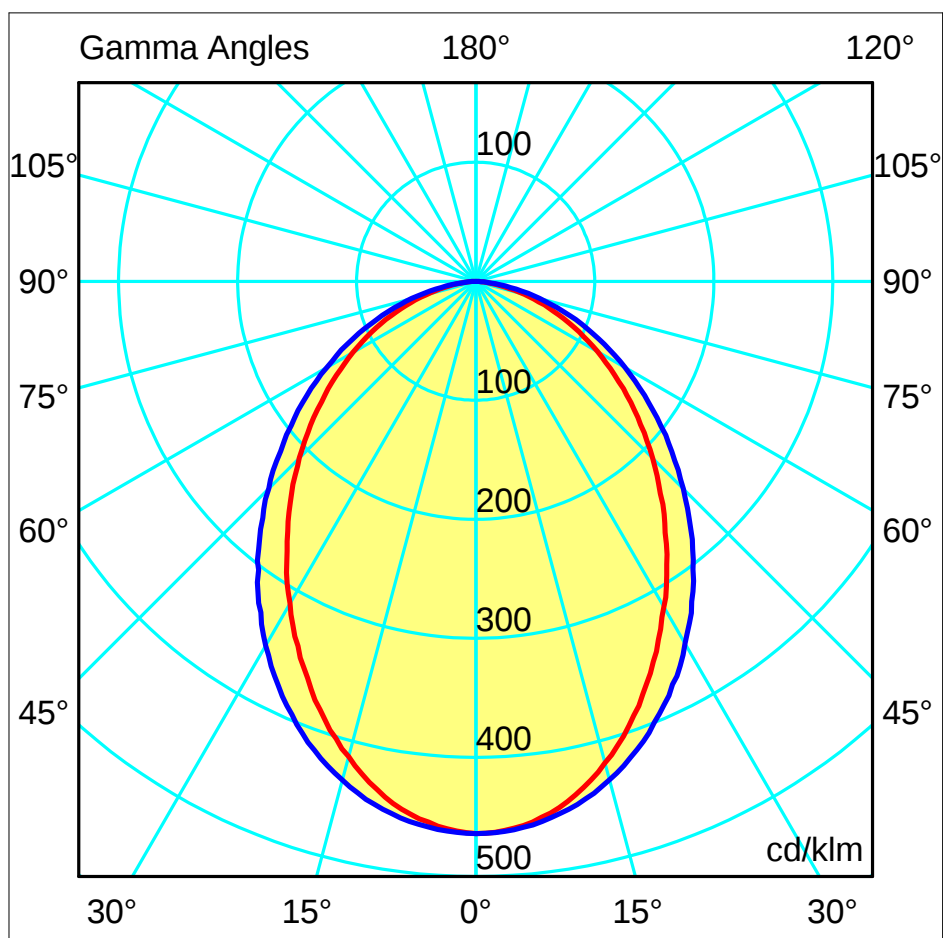
650mm x 60mm



ULOR 0.00 %

DLOR 100.00 %

RN 0.00 %



Luminaire		Measur.								Lamp			
Code	ASTRA MLC 12W	Code	CL673/11-04I						Code	1006B/CL673/11-04L			
Name	ASTRA MLC 12W	Name	ASTRA MLC 12W						Number	1			
Line	Astra Industries 2011	Date	22-04-2011						Position				
Efficiency	100.00%		Coordinate system		C-G		Total Flux		502.68 lm				
Luminous Intensity Table cd/klm													
Table 1/6													
	C 0.00	C 10.00	C 20.00	C 30.00	C 40.00	C 50.00	C 60.00	C 70.00	C 80.00	C 90.00	C 100.00	C 110.00	C 120.00
G 0.0	463.75	463.75	463.75	463.75	463.75	463.75	463.75	463.75	463.75	463.75	463.75	463.75	463.75
G 1.0	463.57	463.65	463.75	463.66	463.66	463.88	464.03	463.81	463.52	463.58	463.44	463.57	463.61
G 2.0	462.97	463.22	463.21	463.16	463.14	463.76	463.47	463.50	463.39	463.23	463.04	463.07	463.08
G 3.0	461.87	462.25	461.88	462.23	462.18	462.69	462.84	462.65	462.50	462.57	462.22	462.43	461.83
G 4.0	460.42	461.08	460.74	461.23	460.90	461.93	461.63	461.80	461.46	461.69	461.36	461.07	460.77
G 5.0	458.80	459.08	458.42	459.49	459.50	460.13	460.17	460.48	460.32	460.34	459.87	459.84	459.06
G 6.0	456.58	456.84	456.55	457.58	457.14	458.43	458.58	459.02	458.90	459.01	457.87	457.78	457.31
G 7.0	453.58	454.27	453.92	454.68	455.22	456.51	456.59	457.32	456.78	457.07	456.40	456.12	454.74
G 8.0	451.15	451.34	451.21	452.26	452.48	454.44	454.37	455.11	455.19	454.80	454.50	454.15	452.96
G 9.0	447.67	447.99	447.60	448.89	449.36	451.12	451.66	452.73	452.53	452.64	451.48	451.14	450.27
G 10.0	443.75	444.06	443.73	446.21	445.79	448.58	448.85	449.98	450.14	450.16	449.13	448.12	446.92
G 11.0	439.44	439.79	439.34	441.72	442.38	445.13	445.32	446.91	447.41	447.56	445.87	445.25	443.79
G 12.0	434.55	435.34	435.66	437.47	438.55	441.29	442.03	443.41	444.22	444.24	443.18	441.60	438.96
G 13.0	429.94	430.92	430.90	433.11	433.93	437.27	437.78	440.79	440.70	441.38	439.41	438.53	435.50
G 14.0	424.84	425.33	425.85	428.45	429.49	432.45	434.33	436.90	437.30	437.29	435.71	434.51	431.19
G 15.0	418.66	420.05	420.56	422.65	424.28	429.16	430.09	432.88	432.94	433.36	431.69	430.87	427.02
G 16.0	413.82	414.49	414.35	417.99	420.08	423.92	425.30	427.97	428.78	429.57	427.69	426.01	422.47
G 17.0	407.55	408.55	408.98	412.27	414.40	419.48	421.29	423.49	424.73	425.53	423.47	421.22	417.51
G 18.0	401.81	403.04	403.58	407.56	409.12	414.23	416.09	420.03	419.84	420.51	418.20	416.95	412.15
G 19.0	394.66	396.80	395.88	401.02	402.90	408.52	410.83	414.50	415.17	416.11	413.55	411.47	406.81
G 20.0	388.17	389.69	390.58	394.83	396.98	402.84	405.46	409.07	410.16	411.36	408.43	406.65	401.52
G 21.0	382.05	383.99	383.74	388.84	390.82	397.68	399.92	404.31	405.27	406.03	403.13	401.14	396.16
G 22.0	374.30	376.70	377.69	382.48	385.72	390.66	394.72	398.75	399.73	399.78	396.94	396.03	389.95
G 23.0	367.33	369.31	370.85	375.61	378.83	385.46	388.89	392.86	393.93	394.83	392.45	389.67	383.16
G 24.0	360.37	362.88	363.87	368.06	372.50	379.10	382.95	386.76	388.22	389.22	385.97	383.49	378.25
G 25.0	352.45	354.59	356.62	362.21	365.64	372.28	374.72	380.80	382.70	384.01	380.61	378.06	371.04
G 26.0	345.96	349.09	349.55	354.96	359.42	365.76	369.95	374.28	376.01	376.76	373.82	371.09	364.36
G 27.0	337.81	341.75	342.68	348.77	351.65	359.17	362.76	368.82	370.50	372.10	366.92	365.00	357.96
G 28.0	330.74	334.15	335.61	340.69	344.39	352.11	355.79	361.44	362.81	365.76	361.34	359.07	351.64
G 29.0	322.54	326.87	328.28	333.76	337.43	344.96	349.15	355.40	357.72	358.76	354.80	351.60	344.85
G 30.0	315.81	319.56	320.13	326.81	330.91	338.62	343.06	348.43	351.37	351.38	348.85	344.67	336.30
G 31.0	309.59	312.13	314.38	319.63	323.76	331.42	336.89	341.54	343.45	344.76	341.85	337.67	331.62
G 32.0	302.17	304.62	306.70	311.96	316.27	324.15	328.85	336.11	337.21	338.42	335.59	331.69	323.56
G 33.0	294.49	297.16	298.35	304.73	309.50	316.98	322.25	328.04	330.33	332.22	327.95	325.07	315.91
G 34.0	286.64	289.54	291.74	297.10	301.59	309.54	314.19	320.82	323.17	324.32	320.76	317.09	309.74
G 35.0	279.91	282.97	284.32	289.64	293.96	301.73	307.08	314.38	315.65	318.02	314.21	311.06	301.93
G 36.0	272.49	274.84	276.29	282.43	287.44	294.34	299.47	306.44	308.88	311.10	307.01	302.94	294.46
G 37.0	264.28	268.43	269.45	275.08	280.10	287.50	292.90	299.63	302.29	303.05	299.71	296.22	288.94
G 38.0	257.88	260.22	262.19	267.56	272.58	280.67	285.53	292.30	294.11	296.55	293.19	289.14	281.49
G 39.0	251.48	253.98	255.16	261.05	265.20	274.00	277.98	285.33	287.18	289.56	284.97	281.89	273.91
G 40.0	244.36	246.85	248.28	254.89	257.13	266.15	269.89	278.01	280.01	283.13	277.56	275.44	265.64
G 41.0	236.35	240.21	240.93	247.02	250.71	259.42	264.53	269.75	272.92	275.35	270.52	267.54	259.16
G 42.0	229.48	233.44	233.42	239.85	244.45	251.61	256.45	263.31	265.30	267.82	263.91	259.76	252.71
G 43.0	223.24	225.72	226.80	232.48	236.21	244.10	248.76	256.70	257.98	260.80	257.29	252.47	244.60
G 44.0	216.52	219.64	219.72	225.70	229.95	236.43	242.32	248.61	251.72	253.47	249.19	245.53	239.28
G 45.0	210.06	212.63	213.36	218.83	223.01	230.24	234.95	241.31	243.40	246.43	241.99	238.49	231.12
G 46.0	203.31	206.98	207.45	213.42	215.95	223.97	226.81	235.89	236.61	239.13	234.80	231.14	224.44
G 47.0	196.49	199.24	200.56	205.94	208.50	217.35	220.61	227.96	229.60	232.43	226.87	224.22	217.08
G 48.0	190.31	192.86	193.71	198.53	201.95	209.94	212.59	220.40	222.03	224.96	220.91	217.65	210.18
G 49.0	183.35	186.44	187.35	192.61	195.32	203.67	206.68	213.75	215.22	218.31	214.06	211.12	204.05
G 50.0	177.77	180.24	180.98	185.94	188.61	196.24	200.19	207.31	207.46	211.55	207.32	203.85	196.44
G 51.0	171.07	175.14	174.47	179.27	182.68	189.60	193.20	200.15	202.03	205.14	200.24	197.22	191.15
G 52.0	165.13	168.03	168.16	173.68	175.80	183.54	186.03	192.36	194.46	197.50	193.96	190.35	184.36
G 53.0	158.76	162.33	162.02	167.91	169.50	176.03	179.93	185.84	187.11	190.63	186.35	183.85	176.70
G 54.0	153.50	155.44	155.54	160.43	162.99	169.50	172.33	179.18	181.00	183.62	179.84	176.86	170.44
G 55.0	146.61	149.38	149.64	155.29	155.73	162.95	166.55	172.46	174.18	177.09	172.96	170.25	163.79
G 56.0	140.68	144.12	143.72	148.70	150.95	157.92	159.19	165.99	167.44	171.06	165.35	164.69	158.10
G 57.0	134.64	137.50	137.96	143.17	144.87	150.82	153.30	159.79	159.97	163.59	160.15	157.91	151.01
G 58.0	128.79	132.34	131.24	136.41	137.52	144.60	146.68	153.24	154.09	157.72	153.61	151.10	144.74
G 59.0	123.64	126.06	126.00	131.62	132.04	138.28	140.47	146.88	147.51	150.60	147.12	145.20	139.02
G 60.0	118.12	120.86	120.71	125.23	126.33	132.34	134.29	141.22	141.85	144.68	139.95	139.84	132.83
G 61.0	112.38	115.78	114.42	119.97	120.33	126.48	127.86	133.89	134.78	138.47	133.64	132.73	127.41
G 62.0	106.79	109.56	108.76	114.15	115.07	120.70	122.22	127.66	128.46	132.03	127.80	126.92	120.55
G 63.0	101.31	104.01	103.18	107.96	108.35	114.05	116.18	122.22	122.55	125.63	121.61	121.71	115.20
G 64.0	96.42	98.44	97.58	102.82	103.22	108.							

Luminaire		Measur.								Lamp			
Code	ASTRA MLC 12W	Code	CL673/11-04I						Code	1006B/CL673/11-04L			
Name	ASTRA MLC 12W	Name	ASTRA MLC 12W						Number	1			
Line	Astra Industries 2011	Date	22-04-2011						Position				
Efficiency	100.00%		Coordinate system		C-G		Total Flux		502.68 lm				
Luminous Intensity Table cd/klm													
Table 2/6													
	C 130.00	C 140.00	C 150.00	C 160.00	C 170.00	C 180.00	C 190.00	C 200.00	C 210.00	C 220.00	C 230.00	C 240.00	C 250.00
G 0.0	463.75	463.75	463.75	463.75	463.75	463.75	463.75	463.75	463.75	463.75	463.75	463.75	463.75
G 1.0	463.39	463.18	463.22	463.13	463.27	463.08	463.19	463.24	463.21	463.30	463.27	463.83	463.53
G 2.0	462.56	462.26	461.99	462.18	461.92	461.95	462.32	462.56	462.49	462.68	462.88	462.97	462.97
G 3.0	461.66	461.23	460.78	460.99	460.83	460.59	461.07	461.26	461.29	461.70	461.72	462.13	461.92
G 4.0	460.51	459.78	458.94	459.16	459.17	458.86	459.10	459.40	459.43	460.18	460.30	461.12	460.92
G 5.0	458.57	457.21	457.29	456.71	457.01	456.00	456.55	457.35	457.75	458.34	458.79	459.59	459.49
G 6.0	456.39	455.28	454.75	454.27	454.22	454.08	454.58	455.13	455.03	456.40	456.75	457.85	457.73
G 7.0	454.15	452.49	451.91	451.29	451.46	450.87	451.33	452.39	452.76	453.85	454.49	455.77	455.79
G 8.0	451.37	449.64	448.62	447.93	447.89	447.86	448.05	449.25	449.62	450.96	452.11	453.51	453.84
G 9.0	448.78	446.66	445.80	444.18	443.91	443.96	444.53	445.71	445.93	448.35	449.28	450.79	451.51
G 10.0	445.88	442.70	441.58	440.31	440.13	439.81	440.12	441.51	441.88	444.00	445.97	447.61	448.45
G 11.0	441.69	439.16	437.40	435.84	436.06	434.77	435.47	437.58	438.22	440.77	442.20	444.14	445.51
G 12.0	437.68	434.32	432.74	430.85	430.92	430.12	431.10	433.39	433.70	436.68	438.46	441.28	442.33
G 13.0	433.33	430.50	429.04	426.45	426.81	424.74	425.37	428.24	429.17	432.57	434.59	437.33	438.64
G 14.0	428.88	425.33	423.34	422.05	420.44	419.21	421.48	423.77	424.74	427.74	430.14	433.98	435.52
G 15.0	424.33	420.25	417.48	415.38	415.86	413.25	415.79	417.85	419.58	422.56	425.93	429.22	431.34
G 16.0	419.76	414.39	412.38	409.78	409.78	408.46	410.19	411.94	412.92	417.64	420.62	425.70	427.09
G 17.0	414.49	408.93	406.68	404.11	403.87	401.68	403.96	407.10	408.46	412.65	415.85	420.07	422.22
G 18.0	408.53	403.53	400.91	397.14	397.64	396.39	397.89	400.84	402.52	407.20	410.06	415.88	418.25
G 19.0	403.02	396.92	394.82	391.45	391.13	389.44	390.99	394.11	396.41	401.51	404.82	410.53	412.97
G 20.0	397.44	392.11	388.65	384.72	384.05	382.94	384.85	388.12	390.80	396.18	399.96	404.49	407.68
G 21.0	391.83	385.73	382.74	378.82	378.33	376.89	378.09	381.52	384.05	390.32	393.87	398.84	402.64
G 22.0	384.72	379.39	375.75	371.92	370.83	369.42	371.29	374.90	377.02	383.69	387.53	394.32	396.84
G 23.0	379.03	373.42	369.10	365.63	363.73	361.92	364.46	368.90	370.63	376.95	381.93	388.19	391.82
G 24.0	373.40	366.08	361.78	357.99	356.94	355.09	358.02	361.16	364.13	370.57	375.67	382.64	385.84
G 25.0	366.60	359.30	354.87	350.79	350.21	348.88	350.10	354.96	357.23	364.07	369.19	375.62	379.05
G 26.0	359.99	352.99	348.53	343.61	343.35	340.86	343.72	347.99	350.96	357.50	362.33	369.38	372.97
G 27.0	353.07	345.59	341.54	336.60	335.18	334.79	336.37	341.02	344.13	350.65	355.84	363.48	367.17
G 28.0	346.24	338.60	335.20	330.20	329.57	327.15	328.16	334.48	337.06	343.23	349.88	357.03	361.55
G 29.0	339.28	332.87	327.92	322.72	322.32	320.23	322.65	327.60	329.14	336.56	342.09	349.96	353.19
G 30.0	332.23	324.58	320.78	315.53	314.35	312.25	315.87	319.39	322.69	329.55	335.12	343.19	347.98
G 31.0	325.25	317.86	313.38	309.01	307.88	305.81	308.29	313.10	315.72	323.02	328.20	336.41	340.21
G 32.0	318.26	310.48	306.08	301.82	300.19	299.30	300.83	305.86	308.14	316.63	320.41	330.01	333.20
G 33.0	311.39	304.04	298.97	294.42	293.16	291.90	293.85	298.57	300.79	309.72	314.18	322.17	326.86
G 34.0	304.76	295.40	291.69	287.21	285.94	283.82	286.79	291.21	293.59	301.70	306.90	315.30	320.17
G 35.0	297.69	289.05	284.41	279.89	278.54	276.51	279.33	284.80	287.17	294.72	299.29	308.70	313.51
G 36.0	289.49	281.75	278.13	273.44	271.59	269.83	272.08	276.93	279.84	286.55	292.44	301.19	305.21
G 37.0	282.15	273.63	270.52	265.50	264.48	262.61	265.40	270.24	272.45	279.24	285.88	293.15	298.08
G 38.0	275.90	268.25	263.75	259.38	257.57	256.15	257.96	262.19	265.43	272.95	278.62	287.16	291.22
G 39.0	267.63	260.15	257.19	251.60	251.32	249.35	250.69	256.91	258.46	266.85	270.36	279.99	284.10
G 40.0	260.89	252.23	249.70	245.16	244.47	242.25	244.43	249.10	252.03	260.05	264.13	272.83	275.56
G 41.0	254.26	246.52	242.77	239.20	238.35	235.87	238.37	242.30	244.30	251.26	256.16	265.60	270.08
G 42.0	247.12	239.97	235.82	231.43	230.74	229.55	231.08	235.59	236.99	244.78	249.51	257.98	261.99
G 43.0	240.40	232.96	228.43	224.83	223.63	222.73	224.22	229.04	231.00	237.58	242.45	251.82	255.54
G 44.0	233.39	226.09	223.02	218.03	217.18	215.28	217.34	222.57	225.18	231.84	236.11	243.90	247.78
G 45.0	226.94	219.23	216.32	212.07	210.43	209.66	211.43	216.49	218.45	225.46	228.75	236.87	240.56
G 46.0	219.33	213.12	210.21	205.23	204.28	202.84	204.87	209.09	210.88	218.75	222.24	229.72	233.95
G 47.0	212.78	205.68	203.74	198.84	197.96	196.42	199.16	203.17	204.61	211.01	214.72	223.07	226.97
G 48.0	208.23	199.03	197.15	192.92	192.25	189.80	192.70	196.10	197.71	205.08	208.78	215.63	217.96
G 49.0	199.64	192.96	190.05	185.93	186.58	184.17	185.80	189.34	190.88	198.85	202.09	208.81	213.15
G 50.0	192.76	185.59	183.48	179.61	179.53	177.80	180.22	183.28	185.47	191.34	195.25	201.87	206.26
G 51.0	185.54	179.55	177.43	174.13	173.18	171.10	173.32	177.26	178.94	184.65	189.31	195.11	198.72
G 52.0	179.85	173.77	171.70	167.20	167.18	164.47	168.70	170.79	172.76	178.89	181.88	189.00	192.77
G 53.0	173.51	166.66	164.89	160.96	161.02	158.72	161.75	165.37	166.60	173.29	176.10	181.86	185.90
G 54.0	167.72	161.00	159.79	154.67	155.73	153.53	155.75	158.45	160.33	166.04	170.03	175.32	179.06
G 55.0	160.75	154.79	153.15	148.95	150.44	147.66	149.44	153.02	154.38	159.79	162.84	169.86	172.79
G 56.0	154.79	148.69	147.71	142.79	143.36	141.17	143.19	147.61	148.25	153.60	156.67	163.15	164.91
G 57.0	148.93	143.23	141.81	136.87	137.94	135.64	138.12	140.17	142.88	147.32	150.57	156.83	160.00
G 58.0	143.48	137.15	135.40	131.68	132.27	129.88	132.05	135.03	136.38	141.17	144.18	150.38	153.65
G 59.0	136.60	131.11	129.54	125.91	127.23	124.83	126.29	129.22	130.98	135.04	138.18	143.47	147.05
G 60.0	130.99	125.23	124.53	120.31	121.01	119.15	120.78	123.41	125.11	129.01	132.66	137.59	139.88
G 61.0	125.39	118.61	118.77	114.21	116.05	113.60	115.78	118.57	119.29	124.49	125.98	131.23	133.75
G 62.0	119.89	114.20	113.37	109.63	110.51	108.03	110.12	112.32	113.59	117.77	120.67	125.08	128.02
G 63.0	113.63	107.81	107.45	104.10	105.05	103.15	104.78	106.55	108.27	111.96	114.08	118.93	120.95
G 64.0	108.42	102.05	102.48										

Luminaire		Measur.							Lamp		
Code	ASTRA MLC 12W	Code CL673/11-04L							Code	1006B/CL673/11-04L	
Name	ASTRA MLC 12W	Name ASTRA MLC 12W							Number	1	
Line	Astra Industries 2011	Date 22-04-2011							Position		
Efficiency	100.00%	Coordinate system			C-G		Total Flux		502.68 lm		
Luminous Intensity Table cd/klm Table 3/6											
		C 260.00	C 270.00	C 280.00	C 290.00	C 300.00	C 310.00	C 320.00	C 330.00	C 340.00	C 350.00
G 0.0	463.75	463.75	463.75	463.75	463.75	463.75	463.75	463.75	463.75	463.75	463.75
G 1.0	463.80	463.69	463.66	463.61	464.00	463.58	463.42	463.37	463.64	463.66	
G 2.0	463.44	463.16	463.18	463.50	463.41	463.22	463.13	462.61	463.21	462.94	
G 3.0	462.49	462.43	462.57	462.67	463.01	462.30	462.50	461.81	462.44	461.89	
G 4.0	461.69	461.58	462.27	461.53	462.08	461.07	460.55	460.32	461.01	460.45	
G 5.0	460.55	460.07	460.56	460.37	460.68	459.17	459.11	458.62	459.68	458.95	
G 6.0	459.16	458.57	458.74	458.79	459.21	458.04	457.48	456.26	457.31	455.92	
G 7.0	457.26	457.07	457.64	456.85	457.04	455.60	455.28	453.89	455.11	453.61	
G 8.0	455.09	455.05	455.30	455.04	454.89	453.27	452.52	451.32	451.70	450.57	
G 9.0	453.04	452.46	453.04	452.36	452.56	449.95	450.06	448.13	448.79	447.22	
G 10.0	450.23	450.16	450.90	449.55	450.03	447.57	447.21	444.21	444.67	443.81	
G 11.0	447.70	447.28	447.50	446.51	445.94	443.79	442.90	440.66	440.73	439.22	
G 12.0	445.73	444.76	445.07	442.83	443.08	440.47	439.48	436.32	436.91	435.00	
G 13.0	441.71	440.99	441.47	439.67	439.33	436.32	434.86	431.70	432.22	429.29	
G 14.0	437.66	437.70	438.40	436.10	435.12	432.42	430.12	426.38	427.30	425.11	
G 15.0	433.69	433.47	434.34	432.38	431.18	426.85	426.63	422.13	422.04	420.54	
G 16.0	429.87	429.80	429.91	428.19	427.08	422.69	420.92	417.21	416.32	414.52	
G 17.0	425.35	425.64	426.32	423.77	422.41	417.50	415.29	412.12	411.16	408.98	
G 18.0	421.16	421.27	421.95	419.43	417.19	412.65	410.49	405.66	405.08	402.64	
G 19.0	416.94	416.43	416.53	414.56	412.31	406.65	404.06	399.65	398.88	395.76	
G 20.0	411.29	412.08	412.31	409.04	407.17	402.48	399.35	393.76	392.25	389.92	
G 21.0	406.22	406.69	406.73	403.49	401.76	395.13	393.30	385.87	386.85	382.96	
G 22.0	401.38	401.37	401.65	397.32	395.61	389.89	386.80	380.80	379.88	375.88	
G 23.0	394.94	395.36	396.17	392.49	389.57	383.90	380.40	374.31	372.32	370.12	
G 24.0	390.01	390.11	390.65	387.06	384.98	377.25	372.71	367.94	366.01	362.08	
G 25.0	384.09	384.63	385.06	381.16	377.16	370.56	366.86	360.13	359.15	355.38	
G 26.0	378.74	378.08	379.16	374.67	371.50	364.54	360.25	353.92	352.13	348.23	
G 27.0	372.36	372.26	373.54	368.07	364.77	356.98	354.16	346.55	344.89	340.89	
G 28.0	365.48	366.12	367.30	361.28	358.01	350.28	346.87	340.41	338.07	333.62	
G 29.0	359.75	359.09	359.78	354.55	351.92	344.00	339.82	332.46	330.17	326.89	
G 30.0	353.17	353.24	354.28	348.67	344.36	336.93	331.95	324.87	322.77	319.37	
G 31.0	347.32	346.62	346.55	342.74	338.84	329.33	324.47	317.48	315.54	312.17	
G 32.0	339.98	339.73	341.06	334.81	330.80	321.32	317.95	309.84	308.47	304.29	
G 33.0	333.34	331.62	334.35	327.91	323.12	314.77	310.37	303.41	301.63	297.28	
G 34.0	325.97	326.16	325.35	320.60	316.34	307.73	303.63	295.40	294.53	289.72	
G 35.0	318.94	319.01	319.02	312.10	309.09	301.00	295.70	288.66	286.15	283.11	
G 36.0	312.59	312.40	311.78	305.40	302.31	292.05	288.87	280.90	278.86	274.71	
G 37.0	305.35	303.37	304.50	298.38	294.02	286.30	280.85	274.49	271.29	268.11	
G 38.0	297.81	298.01	298.40	291.86	287.50	278.78	273.46	267.81	264.68	260.14	
G 39.0	291.17	289.76	290.55	283.57	280.26	271.43	267.18	259.62	257.54	252.90	
G 40.0	283.38	282.66	283.12	276.70	272.57	264.98	259.71	252.60	250.45	246.29	
G 41.0	276.00	275.82	275.46	269.76	266.28	257.26	252.30	245.41	243.63	239.36	
G 42.0	269.72	267.60	269.63	263.17	258.76	249.75	245.37	238.23	236.22	232.06	
G 43.0	261.34	261.39	261.06	254.41	251.55	242.46	238.08	231.20	229.42	225.94	
G 44.0	255.10	254.49	254.77	247.85	243.61	235.70	231.01	224.14	222.33	219.28	
G 45.0	247.45	245.76	247.54	241.39	236.69	229.58	224.73	218.17	215.27	211.42	
G 46.0	240.30	239.77	240.42	234.22	230.03	221.64	217.58	211.36	209.51	205.53	
G 47.0	233.23	233.04	232.98	227.00	221.98	215.52	211.50	203.76	202.81	198.98	
G 48.0	225.97	225.36	225.42	219.87	216.02	207.75	204.92	197.39	195.36	192.30	
G 49.0	218.53	217.26	219.14	212.61	208.85	201.01	197.15	191.01	189.57	185.92	
G 50.0	212.06	210.89	212.17	206.25	202.73	194.73	191.19	184.76	183.25	179.47	
G 51.0	205.13	204.61	205.27	198.87	196.61	188.23	184.44	178.97	176.67	173.43	
G 52.0	198.04	196.84	198.59	192.59	188.27	181.11	178.89	171.70	170.24	166.79	
G 53.0	191.08	190.73	191.38	186.13	181.77	173.94	170.86	165.35	164.34	160.72	
G 54.0	184.97	184.61	183.79	178.09	175.27	168.11	164.85	159.18	158.39	154.46	
G 55.0	177.36	177.94	177.88	172.29	168.91	162.05	158.38	153.81	152.08	148.58	
G 56.0	170.76	171.06	170.81	165.62	162.12	156.31	152.33	147.61	146.12	142.56	
G 57.0	163.76	164.93	163.87	158.48	155.27	149.15	146.16	141.36	140.02	137.20	
G 58.0	157.05	157.76	157.47	152.35	149.03	143.65	139.96	135.41	134.31	130.86	
G 59.0	151.30	151.59	150.80	146.45	143.25	136.66	133.02	129.41	128.65	124.91	
G 60.0	145.65	144.60	144.09	140.50	137.03	131.22	128.12	123.55	122.83	119.77	
G 61.0	138.12	138.02	137.73	133.45	131.59	125.15	123.94	117.71	117.39	114.77	
G 62.0	131.74	132.35	131.76	127.92	124.22	118.69	116.63	112.02	111.49	109.15	
G 63.0	125.30	126.86	125.12	121.24	119.00	112.75	110.40	106.67	105.59	103.18	
G 64.0	119.71	119.79	119.27	114.65	112.01	107.25	105.52	101.22	100.95	98.05	
G 65.0	112.83	113.74	112.41	108.92	106.02	101.97	99.07	95.53	94.57	92.66	
G 66.0	108.15	107.53	107.35	102.70	100.27	96.07	94.06	90.08	89.23	87.39	
G 67.0	101.24	101.95	100.60	97.73	94.05	90.41	87.63	85.17	83.99	82.52	
G 68.0	95.10	94.52	95.15	91.53	88.89	84.75	82.15	79.79	78.41	76.98	
G 69.0	89.65	89.12	88.40	85.72	83.09	79.10	77.28	74.45	73.70	71.45	
G 70.0	83.37	83.79	82.44	79.01	77.32	73.16	71.65	68.68	68.59	66.99	
G 71.0	77.95	77.83	77.07	74.07	71.73	67.29	66.29	63.46	63.02	61.37	
G 72.0	71.86	71.98	71.35	68.30	65.92	63.25	61.15	58.95	58.07	56.95	

Luminaire					Measurem.					Lamp							
Code	ASTRA MLC 12W				Code	CL673/11-04I				Code	1006B/CL673/11-04L						
Name	ASTRA MLC 12W				Name	ASTRA MLC 12W				Number	1						
Line	Astra Industries 2011				Date	22-04-2011				Position							
Efficiency					100.00%					Coordinate system		C-G		Total Flux		502.68 lm	
Luminous Intensity Table cd/klm										Table 4/6							
	C 0.00	C 10.00	C 20.00	C 30.00	C 40.00	C 50.00	C 60.00	C 70.00	C 80.00	C 90.00	C 100.00	C 110.00	C 120.00				
G 73.0	50.89	52.63	51.44	54.64	54.96	58.56	59.21	63.25	64.02	66.09	64.54	63.07	59.26				
G 74.0	46.39	47.54	47.16	49.50	49.63	53.33	53.90	57.79	59.12	60.53	58.42	58.24	53.95				
G 75.0	42.27	43.36	42.59	45.12	45.18	48.39	49.39	52.09	53.10	55.56	53.35	52.73	49.32				
G 76.0	37.28	38.75	38.29	40.37	40.36	43.74	43.72	47.47	47.68	50.18	47.49	47.35	44.03				
G 77.0	32.96	34.36	33.86	35.07	34.80	38.65	39.25	42.17	42.93	45.01	42.97	41.39	39.01				
G 78.0	28.40	30.39	29.72	31.78	31.20	34.13	33.93	36.98	37.81	39.24	37.15	36.68	34.22				
G 79.0	25.43	26.43	25.16	27.23	27.00	29.47	29.68	32.48	32.87	34.67	32.06	32.14	30.01				
G 80.0	21.71	22.49	21.91	23.15	23.23	24.64	25.24	27.23	27.92	29.31	27.80	27.53	25.25				
G 81.0	17.84	19.09	18.94	19.85	19.41	20.49	21.09	22.93	23.54	25.12	23.30	23.16	21.50				
G 82.0	15.33	16.00	15.23	16.24	15.83	17.54	16.99	18.97	19.00	21.20	19.05	18.71	17.13				
G 83.0	12.77	13.30	12.35	13.16	12.60	13.65	13.10	15.22	15.19	16.64	15.51	15.79	13.94				
G 84.0	10.06	10.67	9.72	10.63	10.18	10.86	10.13	12.01	11.70	12.67	11.30	12.06	10.34				
G 85.0	7.39	7.89	7.85	8.21	7.38	7.87	7.39	8.36	8.34	9.42	8.56	8.88	7.83				
G 86.0	4.63	5.08	4.22	5.79	5.03	6.02	4.97	5.81	5.33	6.70	5.49	6.31	5.47				
G 87.0	2.40	3.08	2.50	3.40	2.71	3.72	3.22	3.90	3.30	4.36	3.53	4.24	3.74				
G 88.0	0.61	1.17	0.90	1.53	1.24	1.91	1.72	2.11	2.13	2.77	2.03	2.59	2.04				
G 89.0	0.15	0.18	0.18	0.31	0.31	0.48	0.66	1.18	1.02	1.65	1.04	1.26	0.72				
G 90.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				

Luminaire					Measurem.					Lamp							
Code	ASTRA MLC 12W				Code	CL673/11-04L				Code	1006B/CL673/11-04L						
Name	ASTRA MLC 12W				Name	ASTRA MLC 12W				Number	1						
Line	Astra Industries 2011				Date	22-04-2011				Position							
Efficiency					100.00%					Coordinate system		C-G		Total Flux		502.68 lm	
Luminous Intensity Table cd/klm										Table 5/6							
		C 130.00	C 140.00	C 150.00	C 160.00	C 170.00	C 180.00	C 190.00	C 200.00	C 210.00	C 220.00	C 230.00	C 240.00	C 250.00			
G 73.0	58.74	54.86	55.52	54.24	54.58	53.18	53.40	55.28	56.12	58.63	59.17	61.51	63.71				
G 74.0	53.77	50.81	50.00	48.39	49.23	48.07	49.42	50.14	51.51	52.67	53.63	56.87	58.05				
G 75.0	48.60	45.87	46.31	43.54	45.07	43.40	44.63	45.56	46.47	47.81	48.26	51.09	53.02				
G 76.0	43.42	41.06	41.11	39.13	40.60	38.96	40.24	41.74	41.94	42.79	44.33	47.19	47.66				
G 77.0	38.08	35.81	36.91	35.50	36.08	34.56	35.97	36.83	37.32	38.77	39.28	41.35	41.99				
G 78.0	34.53	32.02	30.75	30.58	32.35	31.25	32.03	32.73	32.90	33.47	33.99	36.27	36.91				
G 79.0	29.50	28.27	28.48	26.93	27.80	26.96	27.47	28.29	28.49	30.00	30.04	31.28	32.39				
G 80.0	25.18	23.25	24.17	22.98	23.77	23.33	23.71	24.56	24.69	24.90	25.77	26.81	28.02				
G 81.0	21.55	19.87	20.43	19.09	20.54	20.12	20.28	20.46	20.43	21.20	21.54	22.46	23.59				
G 82.0	17.78	16.70	17.04	16.23	17.45	16.50	16.87	17.46	17.30	17.64	17.76	18.44	19.29				
G 83.0	13.87	13.29	14.13	13.20	14.47	13.76	14.28	14.22	14.91	14.62	14.49	15.07	15.37				
G 84.0	11.11	10.95	11.35	10.89	11.42	11.27	11.80	11.87	11.34	11.57	11.25	11.30	11.72				
G 85.0	8.72	7.82	8.74	8.03	9.13	7.93	9.07	9.03	8.57	8.78	8.41	8.68	8.45				
G 86.0	6.33	5.68	6.34	5.55	6.31	5.68	6.14	6.79	6.10	6.50	6.06	6.33	5.45				
G 87.0	4.12	2.83	3.68	3.08	3.58	3.33	3.34	3.76	3.54	4.40	3.87	4.20	3.50				
G 88.0	2.07	1.58	2.14	1.42	2.16	1.24	1.63	2.22	1.83	2.47	2.13	2.72	2.13				
G 89.0	0.82	0.43	0.55	0.33	0.47	0.29	0.31	0.44	0.49	0.85	0.82	1.10	1.06				
G 90.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				

Luminaire		Measur.						Lamp		
Code	ASTRA MLC 12W	Code	CL673/11-04I					Code	1006B/CL673/11-04L	
Name	ASTRA MLC 12W	Name	ASTRA MLC 12W					Number	1	
Line	Astra Industries 2011	Date	22-04-2011					Position		
Efficiency	100.00%	Coordinate system	C-G					Total Flux	502.68 lm	
Luminous Intensity Table cd/klm Table 6/6										
	C 260.00	C 270.00	C 280.00	C 290.00	C 300.00	C 310.00	C 320.00	C 330.00	C 340.00	C 350.00
G 73.0	66.75	66.30	65.53	62.57	60.95	57.48	56.15	53.91	53.61	51.89
G 74.0	59.57	61.15	59.92	57.20	54.97	52.01	51.27	49.36	48.97	47.74
G 75.0	55.17	55.75	54.31	51.61	49.85	48.19	46.75	44.61	43.97	43.25
G 76.0	49.43	49.50	48.80	46.87	45.11	42.46	41.35	40.11	38.94	38.55
G 77.0	44.43	45.27	43.34	41.57	39.87	37.58	37.11	35.31	35.30	34.12
G 78.0	39.19	39.42	39.22	37.22	34.86	32.79	31.97	31.14	30.46	29.98
G 79.0	36.34	34.29	33.55	31.57	30.44	28.86	28.02	26.23	26.82	26.03
G 80.0	29.16	29.35	29.15	27.52	25.98	24.78	23.85	22.84	22.37	22.68
G 81.0	24.32	25.15	24.60	22.31	21.69	20.92	19.94	19.09	19.32	19.07
G 82.0	20.79	20.64	19.59	18.13	17.61	16.72	16.23	16.06	15.96	15.98
G 83.0	16.13	16.39	15.50	14.68	13.94	13.51	13.11	13.04	13.35	13.06
G 84.0	12.75	12.51	12.19	11.13	10.25	10.35	10.34	10.32	10.38	10.41
G 85.0	9.40	9.00	8.69	7.96	7.91	7.70	7.81	7.89	7.96	7.54
G 86.0	6.20	6.17	6.41	5.21	5.43	5.20	5.39	5.08	5.50	4.79
G 87.0	4.15	3.53	3.99	3.11	3.72	3.20	3.39	2.45	3.12	2.60
G 88.0	2.58	1.99	2.15	1.82	2.27	1.46	1.88	1.06	1.31	0.79
G 89.0	1.24	1.13	1.06	0.81	0.71	0.34	0.31	0.23	0.24	0.23
G 90.0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

