

1.0 Reference a	nd Address							
Report Number	180601717SHA-001	Original Issued:	22-Jan-2019	Revised: None				
Standard(s)	Luminaires [UL 1598:	_uminaires [UL 1598:2008 Ed.3 +R:17Oct2012]						
	Luminaires (R2013) [uminaires (R2013) [CSA C22.2#250.0:2008 Ed.3 +G1;G2]						
Applicant	Aecolux Technology I	<u>_td.</u>	Manufacturer	Sydney Technology Co., Ltd.				
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2.0 Product Description							
Product	Fixed luminaire						
Brand name	Aecolux, Starclus,	Ethoslite					
Description	The products cove LED driver. Suitab 45℃.	ered by this le for dam	s report were c p location use.	eiling-mounte Suitable for	ed luminaires with operation in ambi	an integral LVLE ent not exceeding	
Models	One letter; followe	d by two n	umbers; follow	ed by two let	ters.		
Model Similarity	 All models had similar mechanical and electrical constructions, the most differences among them were size, wattage, LED quantity and design of diffuser. The LED drivers used in all models are the same, only differences in sampling resistors. Model designation: XYYZZ 'X' could be one letter, which means the design of diffuser. Including: S=Standard thin type, N=Star type, R=Column type, B=Mushroom-1 type, H= Polygon type, C=Irregularity type, A=Square type, M=UFO type, D=Diamond type, P=Thin type, U=Flying saucer type, E=Mushroom type, X=Hypotenuse type, G=Double silver type, I=Development type, F=Thicken type. Detail refers to Sec3. 'YY' could be two numbers including 12, 14, 16, 20 and 22, which means the dimension of luminaire. The first 'Z' could be one letter, which means the color of frame. Including: A=Aluminum color, S=Silver color, G=Golden color, R=Brown color, W=White color, C=transparency color, B=coffee color. The second 'Z' could be one letter, which means the type of customer brand, including: A=Aecolux, S=Starclus, E=Ethosite. 						
	120Vac, 60Hz						
	Model	Wattage	LED driver	LED qty	Dimensions (D x H)	Remark	
Ratings	X12ZZ	17.6W	00001	86pcs	Ø278*50mm	damp location	
i lulingo	X14ZZ	21.5W	00001	126pcs	Ø328*50mm	damp location	
	X16ZZ	28.7W	00001	146pcs	Ø378*50mm	damp location	
	X20ZZ	32.5W	00001	216pcs	Ø478*50mm	damp location	
	X22ZZ	35.5W	00001	240pcs	Ø528*50mm	damp location	
Other Ratings	NA						

Photo 1 - External view of model S22ZZ (representative for all models)



Photo 2 - External view of model S22ZZ (representative for all models)



Photo 3 - Internal view of model S22ZZ (representative for all models)



Photo 4 - Internal view of model S22ZZ (representative for all models)



Photo 5 - Internal view of model S22ZZ (representative for all models)



Photo 6 - LED driver (representative for all models)



Photo 7 - LED driver (representative for all models)



Photo 8 - Diffuser with the 'X' (S)







Photo 10 - Diffuser with the 'X' (R)



Photo 11 - Diffuser with the 'X' (B)



Photo 12 - Diffuser with the 'X' (H)



Photo 13 - Diffuser with the 'X' (C)





Photo 14 - Diffuser with the 'X' (A)



Photo 15 - Diffuser with the 'X' (M)



Photo 16 - Diffuser with the 'X' (D)



3.0 Product Photographs Photo 17 - Diffuser with the 'X' (P)



Photo 18 - Diffuser with the 'X' (U)



Photo 19 - Diffuser with the 'X' (U)



Photo 20 - Diffuser with the 'X' (X)





3.0 Product Photographs Photo 21 - Diffuser with the 'X' (G)



Photo 22 - Diffuser with the 'X' (I)



Photo 23 - Diffuser with the 'X' (F)



4.	0 Cri	tical Compo	nents			
#	Photo no.	Name	Manufacturer/ trademark2	Type / model2	Technical data and securement means	Mark(s) of conformity 3
1	1	Diffuser	SABIC INNOVATIVE PLASTICS US L L C (UL E121562)	940(f1)	PC, Min thickness 1.5mm, V-0, RTI 130°C. For all models.	cURus
2	2 2	Back enclosure	Various	Various	Sheet steel, Min thickness 1.2mm. For all models.	NR
2	2 3	Supply wire	Various	1015	18AWG, 600V, 105°C, VW-1, black for L and white for N. Long enough to extend 150mm into the outlet box. For all models.	cURus
2	2 4	Grounding wire	Various	1015	16AWG, 600V, 105°C, VW-1, mechanically secured on the inner surface of metal enclosure. Long enough to extend 150mm into the outlet box. For all models.	cURus
			REFOND	RF-xxHI32DS- FF-J	2835, Vf 2.9-3.4V, If 150mA. For all models.	NR
			Tian Liao Community, Gong Ming Area, Guang	RF-P3HI32DS- FF-J	2835, Vf 2.8-3.4V, If 150mA. For all models.	NR
4	5	LED	Ming Area, Guang Ming, New District, Shenzhen, China.	RF-P5HI32DS- FF-J	2835, Vf 2.8-3.4V, If 150mA. For all models.	NR
			Maxgather Power	A2835SL1-03- 10-30E-0	2835, Vf 2.8-3.4V, If 150mA. For all models.	NR
			Technology Corp	A2835SL1-03- 10-50E-0	2835, Vf 2.8-3.4V, If 150mA. For all models.	NR
4	6	LED PCB	Various	Various	Metal base, V-0, Min 130°C. For all models.	UR
4,	57	Driver enclosure	SABIC INNOVATIVE PLASTICS B V (UL E45329)	945 (GG)	PC, Min thickness 3.0mm, 5VA, HWI 2, HAI 3, CTI 2, RTI 120°C. For all models.	cURus
5	5 8	Internal wire leading to LED part	Various	1015	24AWG, 600V, 105°C, VW-1, mechanically sucured on the LED PCBs with silicone. For all models.	cURus
5	5 9	Fiber glass tube	Various	Various	Fiber glass, 600V, 125°C, VW-1, fully covered the internal wires leading to the lager LED PCB. For all models.	cURus
2	2 10	Insulation bushing	HEAVY POWER CO LTD (UL E107293)	4N-4	Bushing, incorporating a strain relief. For all models.	UR
6	5 11	LED driver	Sydney Technology Co., Ltd.	00001	Input: 120Vac, 60Hz Output: 38.5Vdc,390mA,15.0W. LVLE. For model X12ZZ.	See 5.0
e	6 12	Fuse(F1)	CONQUER ELECTRONICS CO LTD (UL E82636)	SET	125Vac, 2A.	cURus

4	1.0	Criti	cal Compo	nents			
Ŧ	Photo	ltem no.1	Name	Manufacturer/ trademark2	Type / model2	Technical data and securement means	Mark(s) of conformity 3
		13	13 X capacitor (CX1, CX2)	TENTA ELECTRIC INDUSTRIAL CO LTD (UL E222911)	MEX	X2, 310Vac, -55~110℃.	cURus
	6			DONGGUAN CHAMPION ELECTRONIC TECHNOLOGY CO LTD (UL E477525)	MPX	X2, 250Vac, -40~110℃.	cURus
				DONGGUAN WEIQING ELECTRONIC CO LTD (UL E466405)	MPX	X2, 275Vac, -40~110℃.	cURus
	6	14a	Core of inductance (L4, L2)	Various	Various	Ferrite.	NR
	6	14b	Wire of inductance (L4, L2)	Various	Various	Min 155 <i>°</i> C.	UR
	6	15a	Bobbin of inductance (L3)	Various	Various	Phenalic, Min 150℃, VW-1.	cURus
	6	15b	Wire of inductance (L3)	Various	Various	Min 155 <i>°</i> C.	UR
	6	15c	Tape of inductance (L3)	Various	Various	Min 130℃, VW-1.	UR
	6	16	CBB capacitor (C1, C2, C3)	Various	Various	Min 105 <i>°</i> C.	NR
	6	17a	Core of inductance (L1)	Various	Various	Ferrite.	NR
	6	17b	Wire of inductance (L1)	Various	Various	Min 130 <i>°</i> C.	UR
	6	17c	Heat- shrinkable tube of inductance (L1)	Various	Various	600V, 125℃, VW-1.	cURus
	6	18	Varistor (RZ1)	CERGLASS MFG INC (UL E317616)	07D511K	320Vac, -40∼85 <i>°</i> C.	cURus
			Vaanaaitar	JYH HSU (JEC) ELECTRONICS LTD (UL E356696)	JD Series	Y1, 400Vac, -40∼125 <i>°</i> C.	cURus
6		19	(CY1)	DONGGUAN WEIQING ELECTRONIC CO LTD (UL E466405)	WD	Y1, 400Vac, -25~125℃.	cURus
Г	6	20	Driver PCB	Various	Various	V-0. 130℃.	UR

ED 16.3.15 (20-Apr-17) Mandatory

4.0 Critical Components

Photo #	ltem no.1	Name	Manufacturer/ trademark2	Type / model2	Technical data and securement means	Mark(s) of conformity 3
6	21	Transformer (T1)	SUMITOMO BAKELITE CO LTD	709548	300V, 1A. Class B, provided with Insulation System SBI4.2 of SUMITOMO BAKELITE CO LTD.	See 5.0
1	22	Label (not shown)	Various	Various	Suitable for the surface of product; Max. 90 ℃; For damp location. Complied with UL969. For all models.	cURus

NOTES:

1) Not all item numbers are indicated (called out) in the photos, as their location is obvious.

2) "Various" means any type, from any manufacturer that complies with the "Technical data and securement means" and meets the "Mark(s) of conformity" can be used.

3) Indicates specific marks to be verified, which assures the agreed level of surveillance for the component. "NR" - indicates Unlisted and only visual examination is necessary. "See 5.0" indicates Unlisted components or assemblies to be evaluated periodically refer to section 5.0 for details.

5.0 Critical Unlisted CEC Components

SUBASSEM	IBLY									
Photo #	Item no.	Name			Manufacturer/Trademark			Type / mo	Type / model	
6	11	LED driver			Sydney Technology Co., Ltd.			00001		
Electrical Rating: Input: 120Vac, 60Hz Output: 38.5Vdc,390mA,15.0W. LVLE. For model X12ZZ. Insulation class						-				
Component Standard used: UL 8750:2015 Ed.2+R:05Feb2018 CSA C22.2#250.13:2017 Ed.3										
COMPONE	NTS LIST (re	efer to illus	stration 3 f	or assemb	oly drawing	g)				
Photo #	Item no.	Photo #	Item no.	Photo #	Item no.	Photo #	Item no.	Photo #	Item no.	
6	12	6	15b	6	17c					
6	13	6	15c	6	18					
6	14a	6	16	6	19					
6	14b	6	17a	6	20					
6	15a	6	17b	6	21					
VERIFICAT	ION PROCE	SS								
Frequency:	Annual		Test Site: CEC Number of samples to test: 1					1		
	Test Name					Test Par	rameters			
Verify Cons	truction			Pe	er the com	ponent de	scriptions	noted abo	ove	

5.0 Critical	Unlisted CE	C Compo	nents							
INSULATED										
Photo #	Item no.	Name			Manufact	turer/Trade	emark	Type / mo	odel	
6	21	Transform	ner (T1)		SUMITO LTD	MO BAKE	LITE CO	709548		
Electrical Ra	ating:	300V, 1A SBI4.2 of	. Class B, SUMITO	provided MO BAKE	with Insula	ation Syste LTD.	em	Insulation	class	В
Component	Component Standard used:			2015 Ed.2 2#250.13	2+R:05Feb 8:2017 Ed	o2018 .3				
MATERIALS	S LIST (refer	to illustrat	tion 10 for	assembly	(drawing)	-				
Component		Manufact		Type/mor	diaming/ dol	Dimensio	ns/thickne	es/assem	bly informa	ation
Core		Various	urci	Various		FEBRITE		05/0330m		
COIE		SUMITO	MO	Various				190		
Bobbin		BAKELIT LTD	E CO	PM-9820		Phenolic,	V-0, 150°	°C. cURus		
Primary leac	ds	PACIFIC ELECTRI & CABLE (SHENZH	IC WIRE 2-UEW HEN) CO			130℃. UR.				
LTD PACIFIC ELECTF Secondary leads & CABL (SHENZ		PACIFIC ELECTRI & CABLE (SHENZH LTD	IC WIRE HEN) CO	2-UEW		130 <i>°</i> C. U	R.			
		3M COM	PANY	1350F-1	(b)	130℃ U	R			
Tape JINGJIANG YAHUA PRESSURE SENSITIVE GL CO LTD		NG RE VE GLUE	CT* (c)(g)	130 <i>°</i> C. U	R.				
Insulation sheet ADHESIVE PRODUCT C		NG /E XT CO	WF310 (a) PET films with poly adhesive, white, 13		with poly , white, 13	yester fiber tapes acrylic 30 ℃. cURus.				
Tube		GREAT H INDUSTF LTD	HOLDING RIAL CO	TFL		150V, 200℃. UR.				
Varnish ELANTAS ELECTRICAL INSULATION ELANTAS PDG INC		s Ical 'Ion S PDG	468-2 (d)		130 <i>°</i> C. UR.					
WINDING(S	6) RESISTAN	ICE								
Winding		Wire	Size	\ A /!	T	Turner	\/_l+-	۸	DC resis	stance
Designation		(mi	m²)	vvire	rype	rums	VOIS	Amps	(Ω) +/-	10%:
N4		0.1*	15P	2-U	EW	30	52V	0.15A	0.20)5
N3		0.1*	20P	2-U	EW	28	42V	0.68A	0.15	53
N2 0.120F		*1P	2-U	EW	10	15V	0.02A	0.24	19	
N1 0.2 IF		15P	2-11	EW	30	521/	0.154	0.20)5	
VERIFICAT	ION PROCE	SS				00	52 1	0.10/	0.20	
	A		Test Citer	050			Numero	. of opmal		
Frequency:	Annual		rest Site:	UEU		T	INUMBEI	of sample	es lo test:	1
	i est Name				6	Test Par	ameters	- I:		
Winding res	istance		— .		See re	sistance p	er winding	above.	- · -	
			A	pply volta	ge Betwee	ən	I est V	voltage	l est T	ıme
Dielectric St	rength		ŀ	rimary to	secondar	у У	124	10V	60	S
				Seconda	ry to core		124	40V	60	S

6.0 Critical Features

<u>Recognized Component</u> - A component part, which has been previously evaluated by an accredited certification body with restrictions and must be evaluated as part of the basic product considering the restrictions as specified by the Conditions of Acceptability.

<u>Listed Component</u> - A component part, which has been previously Listed or Certified by an accredited Certification Organization with no restrictions and is used in the intended application within its ratings.

<u>Unlisted Component</u> - A part that has not been previously evaluated to the appropriate designated component standard. It may also be a Listed or Recognized component that is being used outside of its evaluated Listing or component recognition.

<u>Critical Features/Components</u> - An essential part, material, subassembly, system, software, or accessory of a product that has a direct bearing on the product's conformance to applicable requirements of the product standard.

<u>Construction Details</u> - For specific construction details, reference should be made to the photographs and descriptions. All dimensions are approximate unless specified as exact or within a tolerance. In addition to the specific construction details described in this Report, the following general requirements also apply.

- 1. <u>Spacing</u> -In primary circuits 3.2mm minimum spacing are maintained through air and 6.4mm over surfaces of insulating material between current-carrying parts of opposite polarity and between such current-carrying parts and dead-metal parts.
- Mechanical Assembly Components such as switches, fuseholders, connectors, wiring terminals and display lamps are mounted and prevented from shifting or rotating by the use of lockwashers, starwashers, or other mounting format that prevents turning of the component.
- 3. <u>Corrosion Protection</u> All ferrous metal parts are protected against corrosion by painting, plating or the equivalent.
- 4. <u>Accessibility of Live Parts</u> All uninsulated live parts in primary circuitry are housed within a metal enclosure constructed with no openings other than those specifically described in Sections 4 and 5.
- 5. <u>Grounding</u> All exposed dead-metal parts and all dead-metal parts within the enclosure that are exposed to contact during any servicing operation are to be connected together with screws and washers, and the driver enclosure is grounded.
- 6. <u>Polarized Connection</u> This product is provided with a polarized power supply connection. All single pole switches and fuses are connected only to the ungrounded supply circuit conductor.
- 7. Internal Wiring Internal wiring is routed away from sharp or moving parts. Internal wiring leads terminating in soldered connections are made mechanically secure prior to soldering. Recognized Component separable (quick disconnect) connectors of the positive detent type, closed loop connectors, or other types specifically described in the text of this report are also acceptable as internal wiring terminals. At points where internal wiring passes through metal walls or partitions, the wiring insulation is protected against abrasion or damage by plastic bushings or grommets. Min 22AWG, 600V, 105 ℃.
- 8. <u>Markings</u> The product is marked on a labeling system as follows:
- Refer to item22 of Sec4 and Illustration1 of Sec7.
- 9. Cautionary Markings The following are required: Refer to Illustration1 of Sec7 showing the actual text.
- 10. <u>Installation, Operating and Safety Instructions</u> -Instructions for installation and use of this product are provided by manufacturer. Refer to Illustration2 of Sec7 for details.
- 11. <u>Schematics</u> Refer to Illustration3 to 8c of Sec7 for schematics requiring verification during Field Representative Inspection Audits.

Illustration 1 - Markings(S12AA as representative)

CULTEDUS	Aecolux Technology Ltd. Model: S12AA 120Vac, 60Hz, 17.6W DATE CODE: YYMM
Intertek	CONFORMS TO UL STD. 1598
5012145	Label A

SUITABLE FOR DAMP LOCATIONS CONVIENT AUX EMPLACEMENTS HUMIDES SUITABLE FOR OPERATION IN AMBIENT NOT EXCEEDING 45 °C PEUT ÊTRE UTILISÉ À UNE TEMPÉRATURE AMBIANTE N'EXCÉDANT PAS 45 °C CAUTION – RISK OF FIRE ATTENTION – RISQUE D'INCENDIE

Label B

MIN 75 °C SUPPLY CONDUCTORS LES FILS D'ALIMENTATION 75 °C MIN

Label C

CONSULT A QUALIFIED ELECTRICIAN TO ENSURE CORRECT BRANCH CIRCUIT CONDUCTOR CONSULTER UN ÉLECTRICIEN QUALIFIÉ POUR VOUS ASSURER QUE LES CONDUCTEURS DE LA DÉRIVATION SONT ADÉQUATS

Label D

Note:

1. Label A was attached on the enclosure, ETL logo shall be at least 8 mm high. "US" should be at least 2mm high. "Intertek" shall be at least 3mm high, The control No. shall be at least 2mm high. other letters shall be 1.6mm high. "YYMM" is the manuafacturing date code, "YY" denotes the year and "MM" denotes the month.

2. Label B was visible during installation and all letters shall be at least 2.4mm high.

3. Label C was Visible during installation and inspection of wire connections, located near the supply connections and all letters shall be at least 2.4mm high. Additionally, this label should also be located on the smallest unit package or carton and all letters shall be at least 3.2mm.

4. Label D was on the smallest unit package or carton and all letters shall be at least 2.4mm high.

5. The labels of other models are the same except the ratings and model name.

Illustration 2 - Instruction

- 1. Using circumstance;
- 2. Proper wiring connection method, proper installation method.
- 3. Other warnings that will not lead to misuse.

Note: Both French and English instruction shall be provided.





Illustration 4- Schematic diagram and PCB layout of LED part of X12ZZ







Illustration 5- Schematic diagram and PCB layout of LED part of X14ZZ







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-01

-01



Illustration 6- Schematic diagram and PCB layout of LED part of X16ZZ





Illustration 7a- Schematic diagram and PCB layout of LED part of X20ZZ

	SD1 B	5D9	SD17	5025 AV	5000 / B	SD41 📈 B	
	502	5007	SDIF 2	5000	300	SD42	
			A 🕨 🕅	A K	A BR	×	•
	SLD A B	ALLE	A K	A K	ADIK	AD K	C37
	509	SDIE AN B	SDED AN B	som Area	3036 AV B	SOLL XX B	
	AK	AK	AK	AK	ANK	AK	·
	A	ANK	AK	ANKB	AK	ANK	
	500 a	3011 / A	SD22 AV B	SDR XX B	30.00 AV n	SDB XX B	
	SUT AN	5015 40	SIZE AN	505 22	5059	504/ 28-	•
				A	A D R B		
	SD9 A B	SD16 A B	SD94 A B	SDB2 A B	SD40 A B	SD48 A B	
		F-1,	- 				
25	ar 44	48					
V- 9 ¹	MS5-2019-6	3.2					
			50110	SD19	chiro and	sneet	
							1
	S208	50306 A.M.A	Section 22 A	STUE AN A	SELECTION AND A	SULIN A	
	509 22	SUDU	50115 200	SDUB -	SUM 22	50159 201	
	<u></u> ×^	A 🖌 🖈 ^	A 🖌 K ^	A KA	A DR	A 🖌 🕅	10 A1
	A N K		ANK		A DIK	SOLD XX A	
	5010 XV A	SUDD AT A	50017 XX	SITIS AN	SUID AV	SULL XX	
	SOUTH A		A K	A K	STUSS WW	A K	•
		A K A		ANKA			
	SDOD AV	SDILL A	SDI19 A	SDID AZ A	SDIR A	SDEB AA	
	SEC. 11	SDI12	\$2420	3018	30198	5004 4.4	·





COMPANY:	美丽 丁 灯板
TTLE	20- 摸题灯均板
CODE:	DRAWING NO:



Illustration 7b- Schematic diagram and PCB layout of LED part of X20ZZ(continued)

м в
N B
AV B
N _B cas
N/n
XT n
70 n

	SDUS // A	SDOSE // A	SD161	SD169	SD477	SD105	
	SERIE AV A	SUS AF .	SEUG2	SELCO AV A	SULT A	30186 AV A	
	SOUL AN A	Stute AV	SEDER AN	300.71	SULT OF	32047 2.2	•
	SCOLE AV	Stute A	SEUGE ANA	SID /2 A	SDEC ANA	SED IN A	aa
	SCHER AN A	SUM AVA	SENIS XX A	SDL/J A	SDUR A	SEDING A MARK	
C000			SEDISE AN A	SILE A			
			SDAT AN A				
				SDLA XX A			,







COMPANY:	美国旗丁 均板
TITLE	20- 提取打力板
CODE:	DRAWING NO:



Illustration 7c- Schematic diagram and PCB layout of LED part of X20ZZ(continued)



Illustration 8a- Schematic diagram and PCB layout of LED part of X22ZZ



Illustration 8b- Schematic diagram and PCB layout of LED part of X22ZZ(continued)



Illustration 8c- Schematic diagram and PCB layout of LED part of X22ZZ(continued)



Illustration 9- Detail of LED driver

LED driver	Output	Sampling resistors
LED driver 1 for X12ZZ	38.5Vdc,390mA,15.0W	None
LED driver 2 for X14ZZ	35.5Vdc,600mA,21.3W	R1-R8 (82Ω), 8pcs resistors
LED driver 3 for X16ZZ	40.0Vdc,575mA,23.0W	None
LED driver 4 for X20ZZ	41.5Vdc,690mA,28.6W	R1-R4 (68Ω), 4pcs resistors
LED driver 5 for X22ZZ	42.5Vdc,730mA,31.0W	R1-R4 (68Ω), 4pcs resistors

Illustration 10- Dimension of transformer



NOTE:

- 1. 繞線時, PIN1-5 朝机台固定, 繞線需平整, 緊密。
- 2. BOBBIN 为卧式 EFD-25(5+5)PIN, PIN2, 6, 7, 9, 10, CUT OFF.
- 3. N1, N2, N4 绕线时须在俩侧都加 2mm 宽的档墙;
- 4. F线为中间抽头,相绞焊锡后用挡墙绝缘再包于线包内.
- 5. 鐵芯需研磨,研磨铁芯装于 PIN6-10 面,铁芯固定胶带为 0.025*8.0mm*3TS;
- 6. A, B 线为飞线, A 线穿透明 TEFLON, B 线穿黑色 TEFLON 从 PIN6-10 侧底部出线,飞线长度及出线 位置如上图
- 7. 產品需真空含浸,標籤內容如外觀圖所示;



8.0 Test Summary						
Evaluation Period	od 20-Jun-2018 to 20-Nov-2018 Project No. 1			180601717SHA		
Sample Rec. Date	20-Jun-2018	Condition	Prototype	Sample ID.	0180627-64- 001~005	
Test Location	est Location Intertek Testing Services Shanghai Limited.					
Test Procedure	Testing Lab					
Determination of the	result includes con	sideration of measu	rement uncertainty	from the test equ	ipment and	
methods. The produ-	ct was tested as in	dicated below with r	esults in conformation	nce to the relevan	t test criteria.	
The following tests w	ere performed:					
Test Description				UL 1598:2008 Ed.3 +R:17Oct2012 /Clause	CSA C22.2#250.0:20 08 Ed.3 +G1;G2 /Clause	
Normal temperture te	est			14	14	
Mold stress relief test	t			16.4	16.4	
Loading test				16.15	16.15	
Impact test				16.41	16.41	
Dielectric voltage-withstand			17.1	17.1		
Bonding circuit impedance			17.2	17.2		
Test Description				UL 8750:2015 Ed.2+R:05Feb2 018 /Clause	CSA C22.2#250.13:2 017 Ed.3 /Clause	
Input test				8.2	9.2	
Temperature test				8.3	9.3	
Dielectric voltage-with	nstand			8.6	9.4	
Component failure te	st			8.7.2	9.5.2	
Output loading test				8.7.3	9.5.3	
Humidity exposure				8.14.1	9.12.1	
Determination of low-	voltage, limited-en	ergy circuit status		8.16	Annex A	
8.1 Signatures						

A representative sample of the product covered by this report has been evaluated and found to comply with the applicable requirements of the standards indicated in Section 1.0.

Completed by:	Teo Zhang	Reviewed by:	Angus Liu
Title:	Certification Engineer	Title:	Reviewer
Signature:	Fe	Signature:	Dag

9.0 Correlation Page For Multiple Listings The following products, which are identical to those identified in this report except for model number and Listee name, are authorized to bear the ETL label under provisions of the Intertek Multiple Listing Program. Yaham Optoelectronics Co., Ltd **BASIC LISTEE** Address 120 - 13431 Maycrest Way Richmond, BC, V6V 2M3 Country Canada Fixed luminaire Product MULTIPLE LISTEE 1 None Address Country **Brand Name** ASSOCIATED MANUFACTURER Address Country **MULTIPLE LISTEE 1 MODELS BASIC LISTEE MODELS** MULTIPLE LISTEE 2 None Address Country **Brand Name** ASSOCIATED MANUFACTURER Address Country **MULTIPLE LISTEE 2 MODELS BASIC LISTEE MODELS** MULTIPLE LISTEE 3 None Address Country **Brand Name** ASSOCIATED MANUFACTURER Address Country

MULTIPLE LISTEE 3 MODELS	BASIC LISTEE MODELS

10.0 General Information

The Applicant and Manufacturer have agreed to produce, test and label ETL Listed products in accordance with the requirements of this Report. The Manufacturer has also agreed to notify Intertek and to request authorization prior to using alternate parts, components or materials.

COMPONENTS

Components used shall be those itemized in this Intertek report covering the product, including any amendments and/or revisions.

LISTING MARK

The ETL Listing mark applied to the products shall either be separable in form, such as labels purchased from Intertek, or on a product nameplate or other media only as specifically authorized by Intertek. Use of the mark is subject to the control of Intertek.

The mark must include the following four items:

1) applicable country identifiers "US" and/or "C" or "US", "C" and "EU"

2) the word "Listed" or "Classified" or "Recognized Component" (whichever is appropriate)

3) a control number issue by Intertek

4) a product descriptor that identifies the standards used for certification. Example:

For US standards, the words, "Conforms to" shall appear with the standard number along with the word, "Standard" or "Std." Example: "Conforms to ANSI/UL Std. XX."

For Canadian standards, the words "Certified to CAN/CSA Standard CXX No. XX." shall be used, or abbreviated, "Cert. to CAN/CSA Std. CXX No. XX."

Can be used together when both standards are used.

Note: A facsimile must be submitted to Intertek, Attn: Follow-up Services for approval prior to use. The facsimile need not have a control number. A control number will be issued after signed Certification Agreements have been received by the Follow-up Services office, approval of the facsimile of your proposed Listing Mark, satisfactory completion of the Listing Report, and scheduling of a factory assessment in your facility.

MANUFACTURING AND PRODUCTION TESTS

Manufacturing and Production Tests shall be performed as required in this Report.

FOLLOW-UP SERVICE

Periodic unannounced audits of the manufacturing facility (and any locations authorized to apply the mark) shall be scheduled by Intertek. An audit report shall be issued after each visit. Special attention will be given to the following:

- 1. Conformance of the manufactured product to the descriptions in this Report.
- 2. Conformance of the use of the ETL mark with the requirements of this Report and the Certification Agreement.
- 3. Manufacturing changes.
- 4. Performance of specified Manufacturing and Production Tests.

In the event that the Intertek representative identifies non-conformance(s) to any provision of this Report, the Applicant shall take one or more of the following actions:

- 1. Correct the non-conformance.
- 2. Remove the ETL Mark from non-conforming product.
- 3. Contact the issuing product safety evaluation center for instructions.

10.1 Evaluation of Unlisted Components

Because Unlisted Components are uncontrolled, and they do not fall under a third party follow up program, Intertek may require these components to be tested and/or evaluated at least once annually, more often for certain components, as part of the independent certification process. The Unlisted Components in Section 5.0 require testing and/or evaluation as indicated.

Note to Intertek Follow Up Inspector: The Component Evaluation Center, CEC, will notify you in writing when these components must be selected and sent to the CEC for re-evaluation

Ship the samples to: Intertek Testing Services Shanghai Limited ETL Component Evaluation Center Building No. 86, 1198 Qinzhou Road (North)

Shanghai 200233, China Attn: Ms. Angela Han Sample Disposition: Due to the destructive nature of the testing, all samples will be discarded at the conclusion of testing unless, the manufacturer specifically requests the return of the samples. The request for return must accompany the initial component shipment.

11.0 Manufacturing and Production Tests

The manufacturer agrees to conduct the following Manufacturing and Production Tests as specified:

Required Tests

Dielectric Voltage Withstand Test Grounding Continuity Test

11.1 Dielectric Voltage Withstand Test

Method:

One hundred percent of production of the products covered by this Report shall be subjected to a routine production line dielectric withstand test.

The test shall be conducted on products, which are fully assembled. Prior to applying the test potential, switches, contractors, relays, etc., should be closed so that all primary circuits are energized by the test all potential. If all primary circuits cannot be tested at one time, then separate applications of the test potential shall be made.

The test voltage specified below shall be applied between Primary wiring, including connected components, and accessible dead metal parts of a portable luminaire that are likely to become energized, including those parts that are accessible only during relamping. The test voltage may be gradually increased to the specified value but must be maintained at the specified value for one second or one minute as required.

Test Equipment:

The test equipment shall incorporate a transformer with an essentially sinusoidal output, a means to indicate the applied test potential, and an audible and/or visual indicator of dielectric breakdown.

The test equipment shall incorporate a voltmeter in the output circuit to indicate directly the applied test potential if the rated output of the test equipment is less than 500VA.

If the rated output of the test equipment is 500VA or more, the applied test potential may be indicated by either:

1 - a voltmeter in the primary circuit;

2 - a selector switch marked to indicate the test potential; or

3 - a marking in a readily visible location to indicate the test potential for test equipment having a single test potential output.

In cases 2 and 3, the test equipment shall include a lamp or other visual means to indicate that the test potential is present at the test equipment output.

All test equipment shall be maintained in current calibration.

Test Records:

Test records shall be retained for a period of at least six months, and shall include test quantity, test dates, catalog or model numbers, test results, and disposition of any non-complying products.

Products Requiring Dielectric Voltage Withstand Test:				
PRODUCT	Test Voltage	<u>Test Time</u>		
All products covered by this report.	1200V	1 s		

11.2 Grounding Continuity Test

Method:

Each product listed below shall be subjected to a test to determine that there is continuity between accessible dead-metal parts of the product and the grounding pin or blade of the attachment plug.

If all accessible dead metal is connected, only a single test need be performed. A visual or audible device (ohmmeter, buzzer, etc.) may be used to indicate grounding continuity.

Test Equipment:

The grounding continuity test apparatus shall consist of an indicating instrument and an ac or dc power supply of approximately 12 V providing a current of 30A though the bonding means being evaluated.

Test Records:

Test records shall be retained for a period of at six months, and include test quantity, test dates, catalog or model numbers, test results and disposition of any non-complying products.

Products Requiring Grounding Continuity Test:

At least Once per quarter for all products covered by this report.

Test location

Between the point of grounding means and any dead metal part

Allowable value

12.0 Revision Summary

The following changes are in compliance with the declaration of Section 8.1: Project Handler/ Date/ Section Item Description of Change Proj # Site ID Reviewer None