



**JABATAN KERJA RAYA MALAYSIA
UNIT PENSIJILAN BAHAN DAN STANDARD
CAWANGAN KEJURUTERAAN ELEKTRIK**

TECHNICAL INFORMATION

FLUORESCENT LUMINAIRES

A. COMPANY INFORMATION						
COMPANY NAME :						
ADDRESS :					TELEPHONE NO :	
					FAX NO :	
					COMPANY EMAIL :	
ISO CERTIFIED COMPANY			REGISTRATION NO:		SCOPE:	
1. ISO 9001	<input type="checkbox"/>	YES	<input type="checkbox"/>	NO
2. ISO 14001	<input type="checkbox"/>	YES	<input type="checkbox"/>	NO
3. ISO 50001	<input type="checkbox"/>	YES	<input type="checkbox"/>	NO
4. ISO	<input type="checkbox"/>	YES	<input type="checkbox"/>	NO

B. PRODUCT INFORMATION	
CERTIFICATE OF APPROVAL: (SURUHANJAYA TENAGA)	DATE OF ISSUE:
	VALID UNTIL:
PRODUCT CERTIFICATION: LICENSE (SIRIM)	DATE OF ISSUE:
	VALID UNTIL:
TEST REPORT NO.:	TESTING LABORATORY:
	DATE OF ISSUE:
COUNTRY OF MANUFACTURE:	
NAME OF MANUFACTURER:	
FACTORY ADDRESS :	

PRODUCT DETAILS											
Brand name :				(MS IEC 60598-1, MS IEC 60598-2-1, MS IEC 60598-2-2, CIE 121)							
No.	Model. No.	Rated Wattage (W)	Light Output Ratio (LOR≥80%)	Classification	Aluminium Reflector (TLR≥90%: T5) (TLR≥86%: T8)	Diffuser Type	Ballast [Electromagnetic (pf≥0.90) / Electronic (pf≥0.95)] Watt loss≤6W	Capacitor (uF)	Lamp Holder 500V (T5) 250V (T8)	Picture	
1.	e.g : XXX 22214	2x14W	85%	Recessed Mounted Channel c/w Aluminium Reflector & Louvre	≥90% Alanod MIRO®4	Not applicable	pf = 0.95 watt loss = 5W	Not applicable	500V	v	

*Please use separate sheet if this space is insufficient.

C. COMPLIANCE REQUIREMENTS (Please tick \checkmark where applicable)				
No.	Descriptions	Yes	No	Remarks
1.	Luminaires Casing			
1.1	Thickness (Minimum 0.5mm good quality mild steel) : mm.	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.2	Suitable for suspended and surface mounted installation.	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.3	The metalwork shall be rust inhibited to prevent corrosion and sprayed with an undercoat of zinc chromate primer and finished with two coatings of super white baked enamel.	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.4	Rubber or plastic grommets provided at cable entry. Please specify the material:	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.5	Internal wiring using Heat Resistance Type (HR 105°C cable)	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.6	Internal wiring is protected from contact with heat producing components.	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.7	10A terminal block bakelite type	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.8	Terminal block marked with 'L' and 'N' for incoming wires	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.9	Built-in spacer provided in metal casing for channel fitting	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.10	Luminaires suitable for installation in corrosive environments. (if yes, please fill item no.7)	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.	Luminaires Marking			
	Marking is legible and durable.	<input type="checkbox"/>	<input type="checkbox"/>	_____
	Label must include the following information;	<input type="checkbox"/>	<input type="checkbox"/>	_____
	- Origin: _____			_____
	- Rated Voltage: _____			_____
	- Rated Wattage: _____			_____
	- Type of Lamp: _____			_____
	- No. of Lamp: _____			_____
	- Power factor (pf): _____			_____
	- Rated max. ambient temperature (ta): _____			_____
	- IP Rating: _____			_____
3.	Ingress Protection	<input type="checkbox"/>	<input type="checkbox"/>	_____
3.1	Comply with MS IEC 60529 standard.	<input type="checkbox"/>	<input type="checkbox"/>	_____
3.2	Minimum IP2X (except for weatherproof luminaires): IP.....	<input type="checkbox"/>	<input type="checkbox"/>	_____
3.3	IP 65 for weatherproof luminaires.	<input type="checkbox"/>	<input type="checkbox"/>	_____
3.4	Anti-corrosion warranty for minimum 12 months from the date of on-site installation.	<input type="checkbox"/>	<input type="checkbox"/>	_____

C. COMPLIANCE REQUIREMENTS (Please tick \checkmark where applicable)						
No.	Descriptions			Yes	No	Remarks
4.	Louvers and reflectors / Diffuser					
4.1	T8 (FD 26) Fluorescent Luminaires			<input type="checkbox"/>	<input type="checkbox"/>	_____
4.1.1	4.1.1	Louvers made from high purity anodised aluminium with at least 99.85% pure aluminium with no iridescent mirror finish.		<input type="checkbox"/>	<input type="checkbox"/>	_____
	4.1.2	The thickness of the reflector shall be minimum 0.4mmmm.		<input type="checkbox"/>	<input type="checkbox"/>	_____
	4.1.3	The total light reflection of reflector shall be minimum 86%%.		<input type="checkbox"/>	<input type="checkbox"/>	_____
	4.1.4	Photometric data for the luminaires shall be made available (For cut-off angle type)		<input type="checkbox"/>	<input type="checkbox"/>	_____
4.2	T5 (FD 16) Fluorescent Luminaires					
4.2.1	4.2.1	Louvers made from high purity anodised aluminium with at least 99.85% pure aluminium with no iridescent mirror finish.		<input type="checkbox"/>	<input type="checkbox"/>	_____
	4.2.2	The thickness of the reflector shall be minimum 0.4mmmm.		<input type="checkbox"/>	<input type="checkbox"/>	_____
	4.2.3	The total light reflection of reflector shall be minimum 90%		<input type="checkbox"/>	<input type="checkbox"/>	_____
	4.2.3	The Light Output Ratio (LOR) shall be minimum 80% . CIE 121 -		<input type="checkbox"/>	<input type="checkbox"/>	_____
	4.2.3	Fitted with double parabolic louvers (designed specifically for T5 luminaires)		<input type="checkbox"/>	<input type="checkbox"/>	_____
4.3	Diffuser made from UV-stabilised Flame Retardant PETG or minimum UV-stabilised flame retardant material. Please specify the material: _____			<input type="checkbox"/>	<input type="checkbox"/>	_____
4.4	Louvers and reflector / diffuser shall give even light distribution with minimal glare in both the axial and transverse planes.			<input type="checkbox"/>	<input type="checkbox"/>	_____
5	Components (All components shall be guaranteed for a minimum of 2000 hours life span)					
5.1	Electromagnetic Ballast			<input type="checkbox"/>	<input type="checkbox"/>	_____
5.1.1	Comply with MS IEC 61347-1, MS IEC 61347-2-8, MS 141:Pt 2.			<input type="checkbox"/>	<input type="checkbox"/>	_____
5.1.2	Ballast must be approved by the Suruhanjaya Tenaga and EMAL JKR.			<input type="checkbox"/>	<input type="checkbox"/>	_____
5.1.3	Polyester resin impregnated, silent operation type			<input type="checkbox"/>	<input type="checkbox"/>	_____
5.1.4	Fitted with terminal block for ease in connecting wires.			<input type="checkbox"/>	<input type="checkbox"/>	_____
5.1.5	Ballast watt loss must not more than 6W. Please specify:W			<input type="checkbox"/>	<input type="checkbox"/>	_____
5.1.6	Each ballast is marked with the name of the luminaires manufacturer 'Made for (.....)'			<input type="checkbox"/>	<input type="checkbox"/>	_____
5.1.7	Each individual ballast goes to individual tube.			<input type="checkbox"/>	<input type="checkbox"/>	_____
5.1.8	Guaranteed life = Hours.			<input type="checkbox"/>	<input type="checkbox"/>	_____

C. COMPLIANCE REQUIREMENTS (Please tick <i>✓</i> where applicable)				
No.	Descriptions	Yes	No	Remarks
5.2	Electronic Ballast	<input type="checkbox"/>	<input type="checkbox"/>	
5.2.1	Comply with MS IEC 61347-1, MS IEC 61347-2-3, MS IEC60929, BS EN 55015 and MS IEC 61000-3-2 standards.	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.2.2	High frequency ballast must be approved by the Suruhanjaya Tenaga and EMAL JKR.	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.2.3	Preheat start, on-dimming, low in-rush starting current and low leakage	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.2.4	Rated maximum operating temperature of a ballast case shall not exceed 70°C. Please specify:°C	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.2.5	Minimum Energy Efficiency Index Classification (EEL) of A2 as per CELMA/ELC Guide. Please specify: EEL.....	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.2.6	Ballast shall operate and maintain consistent light output over voltage variation from -10% to +5% of the rated voltage.	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.2.7	Power factor of not less than 0.95. Please specify: pf:.....	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.2.8	Five (5) year warranty from the ballast manufacturer.	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.3	Capacitor			
5.3.1	Comply with MS IEC 61048:2006 (IEC 61048+A1:1995 + A2:1999) and MS IEC 61049 standards (latest version).	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.3.2	Capacitor must be approved by the Suruhanjaya Tenaga and EMAL JKR.	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.3.3	Capacitor shall be of dry, self-healing, pure aluminium metalised polypropylene type (MPP) .	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.3.4	Casing is made from aluminium or flame retardant plastic. Please specify :.....	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.3.5	Each capacitor is marked with the name of the luminaires manufacturer 'Made for (.....)'	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.3.6	Guaranteed life = Hours.	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.3.7	Capacitor shall be marked with manufacturing date.	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.4	Lamp Holder			
5.4.1	Comply with MS IEC 60400 standard.	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.4.2	Lamp holder must be approved by the Suruhanjaya Tenaga and EMAL JKR.	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.4.3	Design shall be suitable for bi-pin fluorescent tubes.	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.4.4	Made of polycarbonate material.	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.4.5	Rated minimum 250V or higher than U-out rating for electromagnetic ballast. Please specify:	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.4.6	Rated minimum 500V or higher than U-out rating for electronic ballast. Please specify:	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.4.7	Guaranteed life = Hours.	<input type="checkbox"/>	<input type="checkbox"/>	_____

C. COMPLIANCE REQUIREMENTS (Please tick \checkmark where applicable)				
No.	Descriptions	Yes	No	Remarks
5.5	Lamp Starter			
5.5.1	Comply with MS IEC 60155 standard.	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.5.2	Lamp starter holder comply with MS IEC 60400 standard.	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.5.3	Lamp starter must be approved by the Suruhanjaya Tenaga	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.5.4	For single channel luminaires, the lamp starter shall be fitted at the side of the casing.	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.5.5	Guaranteed life = Hours.	<input type="checkbox"/>	<input type="checkbox"/>	_____
6.0	Power factor			
6.1	Power factor corrected to at least 0.95 lagging (for luminaire fitted with electronic ballast). pf :	<input type="checkbox"/>	<input type="checkbox"/>	_____
6.2	Power factor corrected to at least 0.90 lagging (for luminaire fitted with electromagnetic ballast). pf :	<input type="checkbox"/>	<input type="checkbox"/>	_____
7.0	Requirement for luminaires for installation in corrosive environments.	<input type="checkbox"/>	<input type="checkbox"/>	_____
7.1	Housing (mild steel) shall be non-corrosive, durable finish with smooth reflective white paint.	<input type="checkbox"/>	<input type="checkbox"/>	_____
7.2	Both inside and outside housing finished with double coating of hybrid epoxy polyester compound.	<input type="checkbox"/>	<input type="checkbox"/>	_____
7.3	Thickness of each coating within 50 to 80 microns. Please specify: Thickness: Microns	<input type="checkbox"/>	<input type="checkbox"/>	_____
7.4	Luminaires housing and all its related installation accessories (i.e. steel wire, suspension rods, clips) shall undergo special anti-corrosive treatment	<input type="checkbox"/>	<input type="checkbox"/>	_____
7.5	Warranty/guarantee for the special treatment to the metal parts against corrosion for minimum 12 months from the date of on-site installation.	<input type="checkbox"/>	<input type="checkbox"/>	_____
7.6	Must undergo salt spray test (ASTM B117 or ISO 9227) for 500 hours.	<input type="checkbox"/>	<input type="checkbox"/>	_____
7.7	All screws and nuts, and clips shall be of brass/stainless steel. Material :	<input type="checkbox"/>	<input type="checkbox"/>	_____

8.0 Component List

No.	Components	Manufacturer	Material	Test Report No. / Mill Cert. No.	Testing Laboratory & Standard Reference No.
1.	Casing				
2.	Reflector				
3.	Louvers				
4.	Diffuser				
5.	Electromagnetic Ballast				
6.	Electronic Ballast				
7.	Capacitor				
8.	Lamp Holder				
9.	Terminal Block				
10.	Internal Wiring				
11.	Earthing Terminal				
12.	Terminal Screws				
13.	Grommets				
14.	Lamp Starter				
15.	Others (if any)				

9.0 Manual/Document (Attach relevant document (drawing/diagram))

	Yes	No	Remarks
1. Technical Specification/Catalogue	<input type="checkbox"/>	<input type="checkbox"/>	_____
2. Method of Installation	<input type="checkbox"/>	<input type="checkbox"/>	_____
3. Method of Maintenance	<input type="checkbox"/>	<input type="checkbox"/>	_____

D. OTHERS (Please Specify)

1.
2.
3.

E. PENGESAHAN

Adalah saya dengan ini mengesahkan segala keterangan yang diberikan/dikemukakan bagi produk di atas adalah benar. Jika saya didapati membuat pengakuan **PALSU**, maka tindakan seterusnya boleh diambil oleh pihak JKR ke atas diri dan syarikat diwakili oleh saya.

Cop Syarikat :



Tandatangan :

Nama :

Jawatan :

Tarikh :

F. ULASAN (Untuk Kegunaan Pejabat)

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