



JABATAN KERJA RAYA MALAYSIA
CAWANGAN KEJURUTERAAN ELEKTRIK
UNIT PENSIJILAN BAHAN & STANDARD

TECHNICAL INFORMATION

T8 LED 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						
BRAND NAME :						
MODEL : 1. 4.						
2. 5.						
3. 6.						
STANDARD NO.: (MS IEC/IEC/etc.)						
CERTIFICATE OF APPROVAL : (SURUHANJAYA TENAGA, if any)				DATE OF ISSUE:		
				VALID UNTIL:		
PRODUCT CERTIFICATION : LICENSE (SIRIM/OTHER)				DATE OF ISSUE:		
				VALID UNTIL:		
TEST REPORT NO.:				TESTING LABORATORY:		
				DATE OF ISSUE:		
COUNTRY OF MANUFACTURER:						
NAME OF MANUFACTURER:						
FACTORY ADDRESS :						

TECHNICAL INFORMATION

T8 LED LUMINAIRES

C. STANDARD AND SPECIFICATIONS (Please ✓ and fill up where applicable)

No.	Description	Yes	No	Test Report No & Page No	Remarks (for JKR use)
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NOTES :

1.0 T8 LED Luminaires are tested and manufactured to the following requirements:

1.1	Compliance to MS IEC / IEC 62776	<input type="checkbox"/>	<input type="checkbox"/>						
1.2	Compliance to MS2598 or IEC 62612	<input type="checkbox"/>	<input type="checkbox"/>						
1.3	Compliance to MS IEC / IEC 60598-1	<input type="checkbox"/>	<input type="checkbox"/>						
1.4	Compliance to MS IEC / IEC 60598-2-1 or 60598-2-2	<input type="checkbox"/>	<input type="checkbox"/>						
1.5	Compliance to IES LM-79	<input type="checkbox"/>	<input type="checkbox"/>						
1.6	Compliance to IES LM-80	<input type="checkbox"/>	<input type="checkbox"/>						
1.7	Compliance to MS IEC 62471 / IEC 62471	<input type="checkbox"/>	<input type="checkbox"/>						
1.8	Compliance to MS IEC 60061 / IEC 60061	<input type="checkbox"/>	<input type="checkbox"/>						
1.9	Compliance to MS IEC 60838-2-2 / IEC 60838-2-2	<input type="checkbox"/>	<input type="checkbox"/>						
1.10	Compliance to IEC 61547	<input type="checkbox"/>	<input type="checkbox"/>						
1.11	Compliance to MS IEC 61000-3-2 / IEC 61000-3-2	<input type="checkbox"/>	<input type="checkbox"/>						
1.12	Compliance to CISPR 15 / BS EN 50015	<input type="checkbox"/>	<input type="checkbox"/>						
1.13	Commercially available (not prototype)	<input type="checkbox"/>	<input type="checkbox"/>						
1.14	The tube shall be new and complete with LED Control Gear (self-ballasted), Thermal Management Unit, Surge and Overvoltage Protection	<input type="checkbox"/>	<input type="checkbox"/>						
1.15	Input Voltage 230V (+10%, -6%) 50 Hz	<input type="checkbox"/>	<input type="checkbox"/>						
1.16	Minimum IP20 (except for weatherproof luminaires): IP.....	<input type="checkbox"/>	<input type="checkbox"/>						
1.17	Operate well within ratings with due consideration to the local conditions:								
	a) Humidity up to 95%:	<input type="checkbox"/>	<input type="checkbox"/>						
	b) Ambient Temperature of 35°C:.....	<input type="checkbox"/>	<input type="checkbox"/>						
1.18	Classification of luminaire according to MS IEC 60598 / IEC 60598: Class:	<input type="checkbox"/>	<input type="checkbox"/>						
1.19	Power factor not less than 0.9 lagging:	<input type="checkbox"/>	<input type="checkbox"/>						
1.20	Rated power								
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">600mm T8</td> <td style="width: 50%; text-align: center;">1200mm T8</td> </tr> <tr> <td style="text-align: center;">≤ 11W</td> <td style="text-align: center;">≤ 20W</td> </tr> </table>	600mm T8	1200mm T8	≤ 11W	≤ 20W	<input type="checkbox"/>	<input type="checkbox"/>		
600mm T8	1200mm T8								
≤ 11W	≤ 20W								
	= =								
1.21	Total Luminous Flux (lumens)								
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">600mm T8</td> <td style="width: 50%; text-align: center;">1200mm T8</td> </tr> <tr> <td style="text-align: center;">≥ 840 lm</td> <td style="text-align: center;">≥ 1400 lm</td> </tr> </table>	600mm T8	1200mm T8	≥ 840 lm	≥ 1400 lm	<input type="checkbox"/>	<input type="checkbox"/>		
600mm T8	1200mm T8								
≥ 840 lm	≥ 1400 lm								
	= =								

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T8 LED LUMINAIRES

C. STANDARD AND SPECIFICATIONS (Please ✓ and fill up where applicable)

No.	Description	Yes	No	Test Report No & Page No	Remarks (for JKR use)																		
1.22	System efficacy <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-right: 1px solid black; text-align: center;">600mm T8</td> <td style="width: 50%; text-align: center;">1200mm T8</td> <td style="width: 5%;"></td> <td style="width: 5%;"></td> <td style="width: 20%;"></td> <td style="width: 15%;"></td> </tr> <tr> <td style="border-right: 1px solid black; text-align: center;">≥ 70 lm/W</td> <td style="text-align: center;">≥ 80 lm/W</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td></td> <td></td> </tr> <tr> <td style="border-right: 1px solid black;">=</td> <td style="text-align: center;">=</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	600mm T8	1200mm T8					≥ 70 lm/W	≥ 80 lm/W	<input type="checkbox"/>	<input type="checkbox"/>			=	=					<input type="checkbox"/>	<input type="checkbox"/>		
600mm T8	1200mm T8																						
≥ 70 lm/W	≥ 80 lm/W	<input type="checkbox"/>	<input type="checkbox"/>																				
=	=																						
1.23	Rated Correlated Colour Temperature (CCT): CCT = 3000K (Model:.....) CCT = 4000K (Model:.....) CCT = 5000K (Model:.....)	<input type="checkbox"/>	<input type="checkbox"/>																				
1.24	Lifespan of tube, L70 @ 30,000hrs	<input type="checkbox"/>	<input type="checkbox"/>																				
1.25	Rated Colour Rendering Index, CRI>80. CRI:																						
1.26	Total harmonics distortion (THD) ≤ 20%. THD:.....	<input type="checkbox"/>	<input type="checkbox"/>																				
1.27	Photometric data shall be provided:	<input type="checkbox"/>	<input type="checkbox"/>																				
	i) Polar curve	<input type="checkbox"/>	<input type="checkbox"/>																				
	ii) Utilisation Factor, UF	<input type="checkbox"/>	<input type="checkbox"/>																				
	iii) Light Output Ratio, LOR	<input type="checkbox"/>	<input type="checkbox"/>																				
	iv) Spacing to mounting height ratio (SHR)	<input type="checkbox"/>	<input type="checkbox"/>																				
	v) ies file / LDT file	<input type="checkbox"/>	<input type="checkbox"/>																				
2.0	T8 LED TUBE																						
2.1	LED Package / Module Brand & Model:.....	<input type="checkbox"/>	<input type="checkbox"/>																				
2.2	Number of LEDs:.....	<input type="checkbox"/>	<input type="checkbox"/>																				
2.3	Type of LED interconnection method: series / parallel * schematics diagram shall be provided	<input type="checkbox"/>	<input type="checkbox"/>																				
2.4	The tube shall operate even though there is a failure in partial number of LEDs	<input type="checkbox"/>	<input type="checkbox"/>																				
2.5	LED / LED Package / LED Module shall not be driven more than the rated drive current. Rated drive current:.....	<input type="checkbox"/>	<input type="checkbox"/>																				
2.6	No flickering of light source in mode of operation and when it reaches end of life.	<input type="checkbox"/>	<input type="checkbox"/>																				
2.7	The tube shall be frosted	<input type="checkbox"/>	<input type="checkbox"/>																				
2.8	LED Risk Group, RG0 (Exempt) classification as per IEC 62471	<input type="checkbox"/>	<input type="checkbox"/>																				
2.9	Material of tube (glass / polycarbonate)	<input type="checkbox"/>	<input type="checkbox"/>																				

TECHNICAL INFORMATION

T8 LED LUMINAIRES

C. STANDARD AND SPECIFICATIONS (Please ✓ and fill up where applicable)					
No.	Description	Yes	No	Test Report No & Page No	Remarks (for JKR use)
3.0	LUMINAIRES HOUSING				
3.1	Housing shall be made from good quality of mild steel	<input type="checkbox"/>	<input type="checkbox"/>		
3.2	Thickness (Minimum 0.5mm):.....mm	<input type="checkbox"/>	<input type="checkbox"/>		
3.3	Suitable for suspended and surface mounted installation	<input type="checkbox"/>	<input type="checkbox"/>		
3.4	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"/>		
3.5	Rubber or plastic grommets provided at cable entry. Material:.....	<input type="checkbox"/>	<input type="checkbox"/>		
3.6	Louvres shall be made from high purity anodised aluminium with at least 99.85% pure aluminium with no iridescent mirror finish.	<input type="checkbox"/>	<input type="checkbox"/>		
3.7	The thickness of the reflector (if any) shall be of minimum 0.4mm:mm	<input type="checkbox"/>	<input type="checkbox"/>		
3.8	Diffuser shall be made from UV-stabilised Flame Retardant PETG or minimum UV-stabilised flame retardant material. Material:.....	<input type="checkbox"/>	<input type="checkbox"/>		
3.9	Louvres and reflector / diffuser shall give even light distribution with minimal glare in both axial and transverse planes.	<input type="checkbox"/>	<input type="checkbox"/>		
3.10	Beam Angle shall be of >120°. Angle:.....	<input type="checkbox"/>	<input type="checkbox"/>		
3.12	Total Weight:.....	<input type="checkbox"/>	<input type="checkbox"/>		
4.0	LUMINAIRES MARKING				
4.1	Marking is legible and durable	<input type="checkbox"/>	<input type="checkbox"/>		
4.2	Label must include the following information:				
	- Model No.:	<input type="checkbox"/>	<input type="checkbox"/>		
	- Rated Voltage:	<input type="checkbox"/>	<input type="checkbox"/>		
	- Rated Wattage:	<input type="checkbox"/>	<input type="checkbox"/>		
	- Type of Lamp:	<input type="checkbox"/>	<input type="checkbox"/>		
	- No. of tube:	<input type="checkbox"/>	<input type="checkbox"/>		
	- Power Factor (pf):	<input type="checkbox"/>	<input type="checkbox"/>		
	- Rated max. ambient temperature (ta):	<input type="checkbox"/>	<input type="checkbox"/>		
	- IP Rating:	<input type="checkbox"/>	<input type="checkbox"/>		
	- Origin:	<input type="checkbox"/>	<input type="checkbox"/>		

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C. STANDARD AND SPECIFICATIONS (Please ✓ and fill up where applicable)					
No.	Description	Yes	No	Test Report No & Page No	Remarks (for JKR use)
5.0	CONNECTIONS CABLE / WIRING				
5.1	Connection cables shall be terminated in a termination block marked L and N.	<input type="checkbox"/>	<input type="checkbox"/>		
5.2	For Class 1 Luminaires, a brass direct pressure type terminal shall be provided near the termination block for earth connection.	<input type="checkbox"/>	<input type="checkbox"/>		
5.3	Earth terminal shall be clearly marked with the standard earth terminal symbol.	<input type="checkbox"/>	<input type="checkbox"/>		
5.4	Wiring shall be done in a neat way, no contact with heat producing parts.	<input type="checkbox"/>	<input type="checkbox"/>		
5.5	Means of clamping the electrical cable shall be provided.	<input type="checkbox"/>	<input type="checkbox"/>		
5.6	Cable shall be arranged not to damage the insulation.	<input type="checkbox"/>	<input type="checkbox"/>		
5.7	HR105°C cable shall be used for internal wiring.	<input type="checkbox"/>	<input type="checkbox"/>		
5.8	Terminal block shall comply and tested to IEC 60998-1.	<input type="checkbox"/>	<input type="checkbox"/>		
6.0	LAMP HOLDER				
6.1	Comply with MS IEC 60400 standard	<input type="checkbox"/>	<input type="checkbox"/>		
6.2	Lamp holder must be approved by Suruhanjaya Tenaga and EMAL JKR.	<input type="checkbox"/>	<input type="checkbox"/>		
6.3	Lamp holder shall be of G13 type.	<input type="checkbox"/>	<input type="checkbox"/>		
7.0	REQUIREMENT FOR ANTI CORROSIVE TYPE INSTALLATIONS				
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 of the housing shall be finished with double coating of hybrid epoxy polyester compound.	<input type="checkbox"/>	<input type="checkbox"/>		
7.3	Thickness of each coating shall be within 50 to 80 microns. 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 shall be minimum of 12 months from the date of on-site installation.	<input type="checkbox"/>	<input type="checkbox"/>		
7.6	Luminaires shall 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"/>		

TECHNICAL INFORMATION

T8 LED LUMINAIRES

D. DETAILS OF LUMINAIRES

1.0 List of Components

No.	Components	Manufacturer	Material	Test Report No. / Mill Cert No.	Testing Laboratory & Standard Reference No.
1	Housing / Casing				
2	Reflector				
3	Louvers				
4	Diffuser				
5	Lamp Holder				
6	LED Chip / Package / Module				
7	Terminal Block				
8	Internal Wiring				
9	Earthing Terminal				
10	Terminal Screws				
11	Grommets				
12	Others (if any)				

2.0 Manual/Documents (Please specify and attach relevant documents)

<p>1 Technical Specifications / Catalogue.</p> <p>2 Method of Installations.</p> <p>3 Method of Operation & Maintenance.</p> <p>4 Warranty Certificate (Minimum 5 years warranty)</p> <p>5 Conformity test carried out at 100% of production.</p>	<p>Yes <input type="checkbox"/></p> <p>No <input type="checkbox"/></p>	<p>6 Testing Equipment (Illuminance meter) (Lux Meter)</p> <p>7 Photos to be attached (hardcopy - colour) (with ruler as measurement guide)</p> <p>(i) Top view <input type="checkbox"/></p> <p>(ii) Bottom view <input type="checkbox"/></p> <p>(iii) Optical Compartment c/w marking <input type="checkbox"/></p> <p>(iv) Lamp Holder (show model no.) <input type="checkbox"/></p> <p>(v) Product Marking <input type="checkbox"/></p> <p>(vi) Earthing Terminal & cable entry <input type="checkbox"/></p> <p><i>(Please send softcopy photo - by email / CD to officer in charge)</i></p>
	<p>Yes <input type="checkbox"/></p> <p>No <input type="checkbox"/></p>	<p>Brand: _____</p> <p>Model: _____</p> <p>Calibration by Laboratory: _____</p>

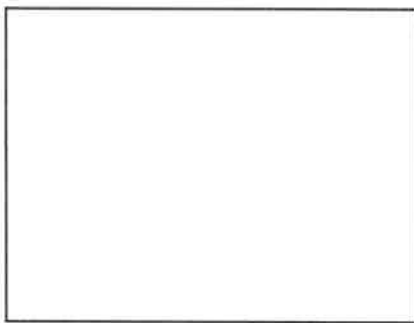
TECHNICAL INFORMATION

T8 LED LUMINAIRES

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)

.....
.....
.....
.....