



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

**TECHNICAL INFORMATION**

**INTEGRATED SOLAR LED ROAD LIGHTING  
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. ....				6. ....		
2. ....				7. ....		
3. ....				8. ....		
4. ....				9. ....		
5. ....				10. ....		
STANDARD NO.:		<b>**Please fill in Annex 1</b>				
(MS IEC/IEC/etc.)						
NAME OF MANUFACTURER:						
FACTORY ADDRESS :						
COUNTRY OF MANUFACTURER:						

**TECHNICAL INFORMATION**

**INTEGRATED SOLAR LED ROAD LIGHTING LUMINAIRES**

<b>C. STANDARD AND SPECIFICATIONS (Please specify)</b>					
<b>No.</b>	<b>Description</b>	<b>Minimum Requirement</b>	<b>To be filled by supplier/manufacturer</b>	<b>Test Report No &amp; Page No</b>	<b>Remarks (for JKR use)</b>
<b>1</b>	<b>LED Luminaire</b>				
1.1	Gross Weight	-			
1.2	Dimensions (W x H x L)	-			
1.3	Class of Luminaire	Class I/II/...			
1.4	Photobiological Safety	Exempt Group / RG1			
1.5	Correlated Colour Temperature, CCT	2500K - 3500K			
1.6	Material of Casing <i>(Please attach mill certificate)</i>	Die cast aluminium			
1.7	Ingress Protection (IP)	IP65			
1.8	Clamps or jam bolts for clamping/securing spigot to bracket arm	Min 2 locking bolts/screw			
1.9	Working Humidity	RH > 80%			
1.10	Ambient Temperature	Ta = 35°C			
1.11	Control Features	a) Automatic dusk to dawn function b) PIR function not allowed c) Dimming function (minimum pre-set required) i) 4 hours/ 100 % ii) 2 hours/ 60 % iii) 6 hours/ 40 %			
<b>2</b>	<b>Light Source (LED Package / LED Chip / LED Module)</b>				
2.1	Brand	-			
2.2	Model	-			
2.3	Manufacturer	-			
2.4	Country of Manufacturer	-			
2.5	Rated LED drive current	-			
2.6	Efficacy (lumen/watt)	>100lm/W			
2.7	Lumen maintenance	L70 @ 50,000hours			
<b>3</b>	<b>Optical System</b>				
3.1	Optical lens	PMMA, UV Stabilized PC, Silicon			
3.2	Reflector	99.85% pure aluminium Min thickness of 1mm			
3.3	Luminaire Cover (Secondary Optics)	-			
	a) Designed as light disperser	tempered glass			
	b) Designed as cover only	UV-Resistant Material			

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<b>4 Solar Photovoltaic (PV) Module</b>					
4.1	Manufacturer	Please attach catalogue			
4.2	Brand				
4.3	Model				
4.4	Module Capacity (W)	Minimum module capacity shall be designed using 4.5 peak sun hours as a reference			
4.5	PV module type	Monocrystalline or Polycrystalline			
4.6	Minimum Module Efficiency at Standard Test Condition (STC)	≥ 12 %			
4.7	I-V curve of module	Please attach Solar PV datasheet			
4.8	Maximum current, Imp (A)				
4.9	Maximum voltage, Vmp (V)	≥ 18.8 As per system voltage Please attach Solar PV datasheet			
4.10	Maximum power, Pmp (W)	P= Imp x Vmp			
4.11	Lifetime (years)	25			
<b>5 Rechargeable Deep Cycle Battery</b>					
5.1	Manufacturer	Please attach catalogue			
5.2	Brand				
5.3	Model				
5.4	Battery type				
5.5	Cycle Efficiency	≥ 90 %			
5.6	Battery Capacity (Wh) & Quantity	a) Please provide detail calculation b) Battery shall be designed to ensure sufficient supply for the whole operation of Solar LED luminaire (from dusk to dawn) c) Capacity shall be designed as per type of LED luminaire & solar PV module offered in Part A2 and according to 2 days autonomy & 80% DOD			
5.7	Operating Temperature (°C)	-5°C to 60°C			
5.8	Charging Mode	Included			
5.9	Days of Autonomy	≥ 2 days			
5.10	Discharge time	≥ 12 hours			

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<b>6</b>	<b>Solar Charge Controller</b>				
6.1	Manufacturer	Please attach catalogue			
6.2	Brand				
6.3	Model				
6.4	Electronic Protection				
6.5	a) Solar Input	over-voltage warning, reverse polarity			
6.6	b) Load Output	overload, high temperature, reverse polarity			
6.7	Efficiency	≥ 90%			
6.8	Humidity	95% Non - condensing			
6.9	Operating Temperature Range (°C)	0°C to 50°C			
6.10	System Voltage (V)	12 VDC or 24 VDC			
6.11	Maximum Charging Current (A)	Please provide detail calculation			
<b>7</b>	<b>System Warranty</b>				
7.1	Warranty for the complete luminaire *Please attach warranty declaration as per Annex 2	5 years			



**TECHNICAL INFORMATION**

**INTEGRATED SOLAR LED ROAD LIGHTING LUMINAIRES**

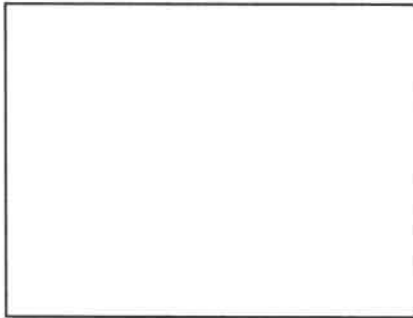
**E. OTHERS ( Please mark ✓ where applicable)**

	Yes	No
1 Manual/Documents (Please specify and attach relevant documents)		
i) Method of Installation	<input type="checkbox"/>	<input type="checkbox"/>
ii) Method of Maintenance	<input type="checkbox"/>	<input type="checkbox"/>
iii) Method of Statement for testing of the complete lighting system installation at site (Luminance & Illuminance Test)	<input type="checkbox"/>	<input type="checkbox"/>
Standard Compliance: ..... (Please specify)		
iv) ies files of luminaires (Please e-mail to officer in charge)	<input type="checkbox"/>	<input type="checkbox"/>
<i>* Note : Once approved, the ies files will be distributed to JKR's designer for lighting simulation</i>		
2 List of testing and measuring instruments :		
i) Illuminance meter	<input type="checkbox"/>	<input type="checkbox"/>
ii) Luminance meter	<input type="checkbox"/>	<input type="checkbox"/>
iii) Measuring tools	<input type="checkbox"/>	<input type="checkbox"/>
iv) .....	<input type="checkbox"/>	<input type="checkbox"/>
v) .....	<input type="checkbox"/>	<input type="checkbox"/>
3 Warranty Certificate	<input type="checkbox"/>	<input type="checkbox"/>
4 Photos to be attached (hardcopy - colour)		
i) Top view (with ruler as measurement guide)	<input type="checkbox"/>	<input type="checkbox"/>
ii) Bottom view (with ruler as measurement guide)	<input type="checkbox"/>	<input type="checkbox"/>
iii) Optical Compartment (LED package/chip/module)	<input type="checkbox"/>	<input type="checkbox"/>
iv) Battery Compartment (Including internal wiring and solar charge controller)	<input type="checkbox"/>	<input type="checkbox"/>
v) Bracket Arm (Diameter and depth of penetration)	<input type="checkbox"/>	<input type="checkbox"/>
vi) Product Marking	<input type="checkbox"/>	<input type="checkbox"/>

**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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**TECHNICAL INFORMATION**

**NAME OF APPLICANT:  
 SUMMARY OF TEST REPORTS**

NO.	DETAILS	MODEL	COMPLYING STANDARDS		TEST REPORT NO.	TEST CERTIFICATE NO.	Name of Manufacturer (refer test report/certificate)	Name of Applicant (refer test report/certificate)
			Standard	Version/Year				
1	LUMINAIRES		IEC 60598-2-3					
			IEC 60598-1					
			IEC 62471					
2	LED CHIP/PACKAGE/ MODULE		IES LM-79					
			IES LM-80					
3	SOLAR PHOTOVOLTAIC (PV) MODULE		IEC 61215-2					
4	SOLAR CHARGE CONTROLLER		IEC 62109-1					
5	RECHARGEABLE DEEP CYCLE BATTERY		IEC 62133-2					
			IEC 62619					
			IEC 62620					

Please indicate N/A if not applicable

Company Stamp



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**WARRANTY DECLARATION**

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**PROJECT :**

**Declaration by Manufacturer / Distributor:**

We hereby guarantee that the complete integrated solar LED luminaire supplied is maintenance free and complete with 5 years' warranty. Shall any part of the integrated solar LED luminaire fail to function at any time within the warranty period we, the manufacturer / distributor, shall duly replace the integrated solar LED luminaire complete with necessary components, labour and installation at our own cost.

Signature of manufacturer / distributor:

Name of Authorized Personnel:

Official stamp:

Date :

\* Warranty certificate is attached