JABATAN KERJA RAYA MALAYSIA

UNIT KAWALAN BAHAN DAN FORENSIK (UKBF)
CAWANGAN KEJURUTERAAN ELEKTRIK

TECHNICAL INFORMATION ON SIGNAL HEAD(TRAFFIC LIGHT)

A. COMPANY

1. Name of Company : .....
2. Address : .....
   .....
   .....
3. Email Address : .....
4. Telephone No : .....
5. Faxs No : .....
6. ISO Certified Company? ☐ Yes ☐ No ☐ Others

   If Yes, ISO Registration No : .....

   Scope Of ISO Certification : .....

B. PRODUCT INFORMATION

1. Brand Name : .....
2. Model : .....
3. Manufacturer : .....
4. Country of manufactured : .....
5. Certification and Test report :
   5.1. Approval Standard : MS 2478:2012 : …… ☐ Yes ☐ No ☐ Others
   If No, Please specified:
   .....

   5.2. Name of Accredited Testing Laboratory : .....
   .....

   5.3. Test Certificate No & Date of Issue : .....
   .....

Please Tick: ☑ Yes ☒ No ☐ - Office use only

C. PRODUCT SPECIFICATION / STANDARD

STANDARD COMPLIANCE

1.0 All components, installation & performance comply to BS EN12368

2.0 Comply to MS 2478:2012- For Signal Head Performance

D	**1.0**	**Classification & Construction** **ASPECT(SIGNAL HEAD)-General Purpose**			For Office use only
	1.1.	The nominal diameter of the exposed face of the lens shall be 300mm	☐ Yes	☐ No	☐
	1.2.	Housing with integrated cooling plate such aluminium cooling plate	☐ Yes	☐ No	☐
	1.3.	Material of housing made of durable black finished of Fibre reinforced polycarbonate	☐ Yes	☐ No	☐
	1.4.	The power supply for the module shall be integral to the unit	☐ Yes	☐ Yes	☐
	1.5.	The signal module shall be single module, self contained devices	☐ Yes	☐ No	☐
	1.6.	Spreading window material made of high impact resistant polycarbonate	☐ Yes	☐ No	☐
	1.7.	Fully tropicalised and suitable to be used up to an ambient temperature of 40°C of continous operation or Class A(-15° C to 60° C)	☐ Yes	☐ No	☐
	1.8.	Provide drainage facilities or other means in the lantern body to minimize possibility of moisture accumulation from leakage and condensation.	☐ Yes	☐ No	☐
	1.9.	Provide with embedded heat sink capability	☐ Yes	☐ No	☐
	1.10.	The exterior finished used shall be possible for a paint finished to be applied subsequently(To avoid color change or other deterioration)	☐ Yes	☐ No	☐
	1.11	Provide **with Top** and **Bottom arrow** for ease of installation and maintenance	☐ Yes	☐ No	☐
	1.12	The width of target board shall be 35mm minimun	☐ Yes	☐ No	☐
	1.13	The target board shall be made from durable resilient materials & shall be stifffened where necessary	☐ Yes	☐ No	☐
	1.14	Provide with Isolating transformers that capable of withstanding as below: (i) A d.c component of up to 100mA superimposed on the a.c input (ii) A flashing sequence of of operation at repeatative rate of 0.5s 'on' and 0.5s "off'	☐ Yes	☐ No	☐
	1.15	Backing Board comply to Class C4	☐ Yes	☐ No	☐
	1.16	Ingress comply to MS IEC60529 – IP65	☐ Yes	☐ No	☐
	1.17	Constructional Integrity Comply to MS IEC 60068-2-64	☐ Yes	☐ No	☐
	1.18	Vibration Test Comply to EN12368:2006 -Table 10	☐ Yes	☐ No	☐
	1.19	Impact Resistance comply to MS IEC60598-1, Class IR1, IR2, IR3 Please specify……	☐ Yes	☐ No	☐
	1.20	Wind loading comply to EN 12899-1	☐ Yes	☐ No	☐
	1.21	Signal Head Visor of Type A	☐ Yes	☐ No	☐
	1.22	The interior surface of visor shall be finished so to minimize the reflections of the illuminated signal	☐ Yes	☐ No	☐
	1.23	The mass of Lantern Aspects shall not exceed the no of 300mm x 8kg	☐ Yes	☐ No	☐
	1.24	Provide with cable entry at the back of aspect c/w screw cover by material housing(dia min.size 26mm & max dia.33mm)	☐ Yes	Yes Yes	Yes Yes ☐ ☐

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E

	2.0 Optical System /LED Signal Module			For Office use only
2.1	Module Type of Hi-Flux (High Power Led)-Minimun useful life 5 years	☐ Yes	☐ No	☐
2.2	Led type of AlInGap, InGaN Note : For InGaN the drive current shall not be more than 20mA(AS/NZ STD)	☐ Yes	☐ No	☐
2.3	Power of LED between 12W- 15W	☐ Yes	☐ No	☐
2.4	Wave length for Red : 613nm to 635nm	☐ Yes	☐ No	☐
2.5	Wave length for Amber : 584nm to 597 nm	☐ Yes	☐ No	☐
2.6	Wavelength for Green : 494nm to **538**nm	☐ Yes	☐ No	☐
2.7	Luminous intensity of optic is between 200cd to 2500cd Please Attached the result : Minimun 200cd-800cd	☐ Yes	☐ No	☐
2.8	Distribution Luminous Intensity performance of Type E, W, M Please specify…….	☐ Yes	☐ No	☐
2.9	Distribution Luminous Intensity performance of Type N	☐ Yes	☐ No	☐
2.10	Luminance Uniformity Lmin: Lmax shall be ≥ 1: 10 For Type E, W & M	☐ Yes	☐ No	☐
2.11	Luminance Uniformity Lmin: Lmax shall be ≥ 1: 15 For Type N	☐ Yes	☐ No	☐
2.12	Life Span ultra bright color of 100,000 hours at -15°C to 60°C on continous operation or higher	☐ Yes	☐ No	☐
2.13	Led mounting by surface mounting	☐ Yes	☐ No	☐
2.14	Provide Chromaticity Coordinate as on CIE Chart-(CIE-54 & Type 1 -CIE 74)	☐ Yes	☐ No	☐
2.15	Phantom requirement complied to class 5 for primary and secondary optics. If different please specify with attachment	☐ Yes	☐ No	☐
2.16	All optical components shall be protected againts misalignment due to forces applied during designed on site installation, cleaning or replacement operation.	☐ Yes	☐ No	☐
2.17	The Optical units shall be protected to IP65	☐ Yes	☐ No	☐
2.18	Lens Impact Resistance comply to Class IR3-EN60598-1	☐ Yes	☐ No	☐
2.19	Symbol Comply to Class S1, Class S2 Please specify.....	☐ Yes	☐ No	☐
2.20	Led Signal module shall be UV stabilised.	☐ Yes	☐ No	☐
2.21	Lenses or filter should be of stable color properties	☐ Yes	☐ No	☐
2.22	Materials used(optical system) for periodic cleaning can withstand the abrasive effects during cleaning	☐ Yes	☐ No	☐

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Continuos from previous page 3-

3.0	***EMC Compliance to EN50293***	☐ Yes	☐ No	
	or			
3.1	**Emission Compliance as below:-**			For Office use only
3.2	Radiated Radio frequency Electromagnetic Field-EN 55022	☐ Yes	☐ No	☐
3.3	Conducted Radio Frequency Electromagnetic Field-EN 55022	☐ Yes	☐ No	☐
3.4	Discontinous Interference-EN 55014	☐ Yes	☐ No	☐
3.5	Harmonic Current-EN 6100-3-3	☐ Yes	☐ No	☐
3.6	Voltage Flickering-EN 61000-3-3	☐ Yes	☐ No	☐
3.7	**Immunity Compliance as below**:	☐ Yes	☐ No	☐
3.8	Radio Frequency Electromagnetic field-EN61000-4-3	☐ Yes	☐ No	☐
3.9	Induced Power Frequency-EN 61000-4-8	☐ Yes	☐ No	☐
3.10	RF Common Mode-EN 61000-4-6	☐ Yes	☐ No	☐
3.11	Electrical Fast Transient-EN61000-4-4	☐ Yes	☐ No	☐
3.12	Surge Voltage-EN61000-4-5	☐ Yes	☐ No	☐
3.13	Voltage Dips and Interruption-EN61000-4-11	☐ Yes	☐ No	☐

G

4.0	**Others Test for Signal Head Module**			
4.1	Cold and Heat Testing comply to MSIEC 60068-2-1 & MS IEC60068-2-2	☐ Yes	☐ No	☐
4.2	Temperature Cycling Testing	☐ Yes	☐ No	☐
4.3	Solar & UV Radiation Testing comply to MS IEC 60068-2-5	☐ Yes	☐ No	☐
4.4	Sine wave & random vibration testing-Comply to IEC 60068-2-64	☐ Yes	☐ No	☐
4.5	Compression Testing	☐ Yes	☐ No	☐
4.6	Altitude/low pressure testing	☐ Yes	☐ No	☐
4.7	Steady state temperature/humidity testing	☐ Yes	☐ No	☐

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H

5.0 Marking and labeling of the Signal Head Set shall be visible and Legible as below:

				For Office use only
5.1	Manufacturer's name	☐ Yes	☐ No	☐
5.2	Trademark	☐ Yes	☐ No	☐
5.3	Model Number	☐ Yes	☐ No	☐
5.4	Serial Number	☐ Yes	☐ No	☐
5.5	Performance level class A	☐ Yes	☐ No	☐
5.6	Luminous Intensity distribution	☐ Yes	☐ No	☐
5.7	Phantom Class (Class 3-Class 5)	☐ Yes	☐ No	☐
5.8	Symbol Class	☐ Yes	☐ No	☐
5.9	Impact Resistance-IR3	☐ Yes	☐ No	☐
5.10	Ingress protection- IP 65	☐ Yes	☐ No	☐
5.11	Environmental Class	☐ Yes	☐ No	☐
5.12	Date of Manufacturer(month & year)	☐ Yes	☐ No	☐
5.13	Lot No.	☐ Yes	☐ No	☐
5.14	Rate Voltage(permanently marked at the back of the module)	☐ Yes	☐ No	☐
5.15	Rated Power-Watts/Volt Ampere(Permanently marked at The back of the module)	☐ Yes	☐ No	☐

I

6.0 Electrical Input/Output Parameter

6.1	Voltage range from 100V to 280V rms	☐ Yes	☐ No	☐
6.2	Frequency range from 48Hz to 52Hz	☐ Yes	☐ No	☐
6.3	Power Factor ≥ 0.90	☐ Yes	☐ No	☐
6.4	Total Harmonic ≤ 20%	☐ Yes	☐ No	☐

7.0 Others requirement

7.1	Relative humidity > 95%	☐ Yes	☐ No	☐

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J ***Functional Test At Site –Please specify if different***

1. Measured Wattage Of Led Module(by gp) ☐ Yes
2. Measured of Wavelength
   (i) Red Color
   (ii) Amber Color
   (iii) Green Color
3. Test On Luminous Intensities of Optic
4. Test on Phasing & grouping
5. Test on Earthing System

I, ……hereby declare that the information given by me on behalf of the Company in this form and in any document attached is correct and true.

Date : ……..……..

Designation : ……..…….

Signature : ……..…….

Company's Stamp

FOR OFFICE USE

Comment :

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Annex A - Detail of Signal Heads

Nos	Model	Rated Current (A)	Power-Watts(Volt Ampere)	Operating Rated Voltage (V) & Hz	LED Type	Wiring	Temperature Range	Color	Material lens /housing	Overall Dimension (including front lens)	Weight	Lamp holder	lamp	Phantom Class	IP Class

Note: Catalogue shall be provided

ANNEX-B

TYPE OF LANTERN	TARGET BOARD DIMENSION (mm)										
	SINGLE ASPECT DISPLAY		TWO ASPECT DISPLAY SINGLE COLUMN DISPLAY		THREE ASPECT SINGLE COLUMN DISPLAY		THREE ASPECT TWO COLUMN DISPLAY		FOUR ASPECT SINGLE COLUMN		
	W	H	W	H	W	H	W	H	W	H	
300 mm nominal diameter	670	640	670	980	670	1320	1000	1320			Width of Target Board - 35mm
Pick (√) or (X)											