



**MCCAA**

**MALTA COMPETITION AND  
CONSUMER AFFAIRS AUTHORITY**



**Annex 3B**

**COMMUNICATION**

concerning<sup>2</sup>:

**APPROVAL GRANTED  
APPROVAL EXTENDED  
APPROVAL REFUSED  
APPROVAL WITHDRAWN  
PRODUCTION DEFINITELY DISCONTINUED**

of a type of electrical/electronic sub-assembly<sup>2</sup> pursuant to Regulation No. 10.


**Approval No.:**

E50 10R-050067

**Extension No.:**

Not applicable

- |   |   |
|---|---|
| <b>1. Make (trade name of manufacturer):</b>  | HANMA, TOTRON, HL, EC   |
| <b>2. Type and general commercial description(s):</b>   | Exterior LED work light and light bar   |
| <b>3. Means of identification of type, if marked on the vehicle/component/ separate technical unit<sup>2</sup>:</b>         | Not applicable  |
| <b>3.1 Location of that marking:</b>  | Not applicable  |
| <b>4. Category of vehicle:</b>  | All categories of vehicle   |
| <b>5. Name and address of the manufacturer:</b>   | Guangzhou Hanma Electronics Technology Co., Ltd.<br>No. 8, Jianye Middle Road, Taihe Town, Baiyun District, Guangzhou, Guangdong, 510540, China |
| <b>6. In the case of components and separate technical units, location and method of affixing of the ECE approval mark:</b> | Printed label on the housing  |
| <b>7. Address(es) of assembly plant(s):</b>   | Guangzhou Hanma Electronics Technology Co., Ltd.<br>No. 8, Jianye Middle Road, Taihe Town, Baiyun District, Guangzhou, Guangdong, 510540, China |

8. **Additional information (where applicable):** See appendix
9. **Technical service responsible for carrying out the tests:** Vehicle Technical Service Ltd. - Valletta (MALTA)
10. **Date of test report:** 03.12.2015
11. **No. of test report:** J0888U3G01AA
12. **Remarks (if any):** See appendix
13. **Place:** Blata I-Bajda
14. **Dated:** 10.12.2015
15. **Signature:** For Technical Regulations Division
- 
- 
- (Director General)  
Mr. Edward Xuereb
16. **The index to the information package lodged with the Approval Authority, which may be obtained on request, is attached.**
17. **Reason(s) for extension:** Not applicable

E50 10R-050067

**Appendix to type-approval communication form No. E50 10R-050067 concerning the type-approval of an electrical/electronic sub-assembly under Regulation No. 10**

- 1. Additional information:**
- 1.1 Electrical system rated voltage:** 24V DC pos/neg ground<sup>2</sup>
- 1.2 This ESA can be used on any vehicle type with the following restrictions:** No restrictions
- 1.2.1 Installation conditions, if any:** Connected to battery of the vehicle
- 1.3 This ESA can be used only on the following vehicle types:** All categories of vehicle
- 1.3.1 Installation conditions, if any:** Not applicable
- 1.4 The specific test method(s) used and the frequency ranges covered to determine immunity were:** Not applicable
- 1.5 Laboratory accredited to ISO 17025 and recognized by the Approval Authority responsible for carrying out the test:** Shanghai Inspection and Testing Institute of Instruments and Automatic Systems (SITIIS)
- 2. Remarks:** None

- 
- (1) Distinguishing number of the country which issued/extended/refused/withdrew approval (see Regulation provisions on approval).
- (2) Strike out what does not apply.





## SUMMARY

**Report number: J0888U3G01AA**

Date of issue	03.12.2015
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File	J0888U3G01AA

### V.T.S.

Vehicle Technical Service Ltd.  
18/2, South Street  
Valletta  
MALTA

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### TEST DETAILS

Subject: ECE Type-Approval  
EC directive: N/A  
ECE regulation: ECE R10.05  
V.T.S. representative: Matthew MANGION  
Location of test: Shanghai Inspection and Testing Institute of Instruments and Automatic Systems (SITIIAS)  
Date of test: 12.11.2015 to 17.11.2015

### MANUFACTURER'S DETAILS

Manufacturer's name: Guangzhou Hanma Electronics Technology Co., Ltd.  
Manufacturer's address: No. 8, Jianye Middle Road, Taihe Town, Baiyun District, Guangzhou, Guangdong, 510540, China  
Type: Exterior LED work light and light bar  
Item: LED auto light

### CONCLUSION

The tests and inspections carried out have shown the compliance of the type described in this report and attached annexes with the regulation mentioned above.

#### Immunity test:

the immunity test has been carried out in an absorber-chamber according to the procedure provided by the reference standard. The device did not suffer any anomaly when tested for immunity to electromagnetic radiation.

#### Emissions test:

according to the results the devices tested is considered to comply with the requirement laid down in the reference standard relating to radiated electromagnetic emissions.

#### Immunity to transient disturbances:

according to the results the devices tested is considered to comply with the requirement laid down in the reference standard relating to immunity to transient disturbance conducted along supply lines.

### LIST OF ANNEX

Annex	Description	Pages
A	Reason(s) for extension	N/A
B	Test results	2



## ANNEX B TEST RESULTS

Date	03.12.2015
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### V.T.S.

Vehicle Technical Service Ltd.  
18/2, South Street  
Valletta  
MALTA

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0. General information
- 0.1. Make (trade name of the manufacturer): HANMA, TOTRON, HL, EC
- 0.2. Type: Exterior LED work light and light bar  
commercial description(s): LED auto light
- 0.3. Name and address of the manufacturer: Guangzhou Hanma Electronics Technology Co., Ltd.  
No. 8, Jianye Middle Road, Taihe Town, Baiyun District, Guangzhou, Guangdong, 510540, China
- 0.4. Name and address of authorized representative, if any: Not applicable
- 0.5. Information folder  
- number Exterior LED work light and light bar-00  
- date of issue 02.11.2015
1. Tested vehicle(s) / object(s)
  - 1.1. Location and date of test:
    - 1.1.1. Location: Shanghai Inspection and Testing Institute of Instruments and Automatic Systems (SITIIAS)
    - 1.1.2. Date: 12.11.2015 to 17.11.2015
  - 1.2. Description:
    - 1.2.1. vehicle/object: Object
    - 1.2.2. Tested object(s): LED auto light
  - 1.3. Remark: All versions of the device type as stated in the information document are covered by the tested device versions and tested objects respectively.



## ANNEX B TEST RESULTS

Date	03.12.2015
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### V.T.S.

Vehicle Technical Service Ltd.  
18/2, South Street  
Valletta  
MALTA

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- |        |  |   |
|--------|--|---|
| 2.1.   | Test results:  | The tested item(s) for Exterior LED work light and light bar meet the related requirements of ECE R10.05                      |
| 2.2.   | Electrical system rated voltage:   | 24V DC (Negative Ground)  |
| 2.3.   | This ESA can be used on any vehicle type with the following restrictions:  | No restrictions   |
| 2.3.1. | Installation conditions, if any:   | Connected to battery of the vehicle   |
| 2.4.   | This ESA can only be used on the following vehicle types:  | All vehicle categories  |
| 2.4.1. | Installations conditions, if any:  | Not applicable  |
| 2.5.   | The specific method(s) used and the frequency ranges covered to determinate immunity were (please specify precise method used from Annex IX):          | Not applicable  |
| 2.6.   | Laboratory accredited to ISO 17025 and recognized by the Approval Authority (for the purpose of this Directive) responsible for carrying out the test: | Shanghai Inspection and Testing Institute of Instruments and Automatic Systems (SITIIAS)                                      |
| 2.7.   | Remarks:   | Not applicable  |
| 3.     | List of appendices   | Not applicable  |
| 4.     | Statement of conformity  | The abovementioned information folder and the device type described in that comply with the requirements mentioned on Page 1. |

N.B.

The results recorded in this report concern exclusively this tested sample.

Date: 03.12.2015

Signature

VTS Type Approval Manager  
(Ing. Matthew MANGION)

**Content**

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Type

Exterior LED work light and  
light bar

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INFORMATION DOCUMENT FOR TYPE-APPROVAL OF AN ELECTRIC/ELECTRONIC  
SUB-ASSEMBLY WITH RESPECT TO ELECTROMAGNETIC COMPATIBILITY  
ACCORDING ANNEX IIB OF ECE-R10.05

- 1 Make (trade name of the manufacturer) : HANMA, TOTRON,HL,EC
- 2 Type and general commercial description(s) : Exterior LED work light and light bar
- commercial description(s) : LED auto light
- version(s) : HML-4915, HML-4927, HML-5018, HML-5027, HML-5242, HML-5148, HML-5318, HML-5318FC, HML-1212, HML-1212FC, HML-1212HL, HML-1212FCHL, HML-1218, HML-1218FC, HML-1218HL, HML-1218FCHL, HML-1918, HML-1918HL, HML-1918FC, HML-1918FCHL, HML-1918-OS1.5, HML-1918FC-OS1.5, HML-2318, HML-2318FC, HML-2318HL, HML-2318FCHL, HML-2318-OS1.5, HML-2318FC-OS1.5, HML-4330D, HML-4330, HML-4430, HML-2960, HML-3160, HML-3975, HML-3845, HML-4024, HML-2460, HML-2448E, HML-2448HL, HML-2480, HML-4215, HML-4209, HML-4106, HML-4110, HML-3706, HML-4809, HML-2820, HML-5418, HML-5430, HML-5545, HML-5530, HML-R0160, HML-R0190, HML-R0248, HML-R0280, HML-3265, HML-3039, HML-2260, HML-2290, HML-1310, HML-1410, HML-2630, HML-2745, HML-0330, HML-1640, HML-0118, HML-0215, HML-1748, HML-1042, HML-0424, HML-0524, HML-0627, HML-0727, HML-B609, HML-B618, HML-B645, HML-B672, HML-B690, HML-B6117, HML-B560, HML-B5120, HML-B5180, HML-B5240, HML-B5300, HML-BC460L, HML-BC4120L, HML-BC4180L, HML-BC4240L, HML-BC4300L, HML-BC236, HML-BC272, HML-BC2120, HML-BC2180, HML-BC2240, HML-BC2288, HML-BC2300, HML-BC2312, HML-B1030, HML-B1060, HML-B1090, HML-B1120, HML-B1150, HML-BCS1060, HML-BCS1100, HML-BCS1140, HML-BCS1200, HML-BCS1240, HML-BCS460, HML-BCS4120, HML-BCS4180, HML-BCS4240, HML-BCS4300

Type	Exterior LED work light and light bar
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Malta Competition and Consumer Affairs Authority	E50-10R-050067



Guangzhou Hanma Electronics Technology Co., Ltd.  
Exterior LED work light and light bar -00

Application date: November 02, 2015

- 3 Means of identification of type, if marked on the component/separate technical unit : N/A
- 3.1 Location of that marking : N/A
- 4 Name and address of the manufacturer : Guangzhou Hanma Electronics Technology Co., Ltd.  
No. 8, Jianye Middle Road, Taihe Town, Baiyun District, Guangzhou, Guangdong, 510540, China
- 4.1 Name and address of authorized representative, if any : N/A
- 5 In the case of components and separate technical units, location and method of affixing of the approval mark : Printed label on the housing
- 6 Address(es) of assembly plant(s) : Guangzhou Hanma Electronics Technology Co., Ltd.  
No. 8, Jianye Middle Road, Taihe Town, Baiyun District, Guangzhou, Guangdong, 510540, China
- 7 This ESA shall be approved as a : Component/STU
- 8 Any restrictions of use and conditions for fitting : No restrictions

Type	Exterior LED work light and light bar
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Guangzhou Hanma Electronics Technology Co., Ltd.  
Exterior LED work light and light bar -00

Application date: November 02, 2015

Additional information

Electrical system rated voltage : 24V DC (negative ground)

This ESA can be used on any vehicle type with the following restrictions : No restrictions

Installation conditions : Connected to battery of the vehicle

This ESA can be used on the following vehicle types : All categories of vehicle

Installation conditions : ---

The specific test method(s) used and the frequency ranges covered to determine immunity were : Not applicable

frequency range : ---

Remark : ---

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Description of items (ESA) chosen to represent the type:

We have initially 112 individually named lamps under this application for approval; however, the same product may have exactly the same components, except for the lens and/or bezel;

There are 24 of square work lights.

HML-4915 has 5 white 1.5w LEDs and wide voltage

HML-4927 has 9 white 1.5w LEDs and wide voltage

HML-5148 has 16 white 1.5w LEDs and wide voltage

HML-1212, HML-1212HL and HML-1410 have 4 white 3w LEDs and wide voltage

HML-1218 and HML-1218HL have 6 white 3w LEDs and wide voltage

HML-4809 has 3 white 3w LEDs and wide voltage

HML-R0160, HML-2260 and HML-2630 have 6 white 10w LEDs and wide voltage

HML-R0190 and HML-2290 have 9 white 10w LEDs and wide voltage

HML-1310 has 1white 10w LEDs and wide voltage

HML-1640 has 4white 10w LEDs and wide voltage

HML-R0248 and HML-1748 have 16 white 3w LEDs and wide voltage

HML-R0280 has 16 white 5w LEDs and wide voltage

HML-0215 has 5 white 3w LEDs and wide voltage

HML-2745 has 9white 5w LEDs and wide voltage

HML-0330 has 1white 30w LEDs and wide voltage

HML-0524 has 8 white 3w LEDs and wide voltage

HML-0727 has 9 white 3w LEDs and wide voltage

There are 4 of square work lights with flush mounting

HML-1212FC and HML-1212FCHL have 4 white 3w LEDs and wide voltage

HML-1218FC and HML-1218FCHL have 6 white 3w LEDs and wide voltage

There are 23 of round work lights.

HML-2318, HML-2318HL and HML-0118 has 6 white 3w LEDs and wide voltage

HML-2318-OS1.5 and HML-5018 have 6 white 1.5w LEDs and wide voltage

HML-5027 has 9 white 1.5w LEDs and wide voltage

HML-5242 has 14 white 1.5w LEDs and wide voltage

HML-4330D, HML-4330 and HML-4430 have 1white 30w LEDs and wide voltage

HML-2460, HML-2960 and HML-3160 have 6white 10w LEDs and wide voltage

HML-3975 has 25white 3w LEDs and wide voltage

HML-3845 has 15white 3w LEDs and wide voltage

HML-4024 and HML-0424 has 8white 3w LEDs and wide voltage

HML-2448E and HML-2448HL have 16white 3w LEDs and wide voltage

HML-2480 has 16 white 5w LEDs and wide voltage

HML-2820 has 4 white 5w LEDs and wide voltage

HML-1042 has 14 white 3w LEDs and wide voltage

HML-0627 has 9 white 3w LEDs and wide voltage

There are 3 of round with flush mount work lights

HML-2318FC and HML-2318FCHL have 6 white 3w LEDs and wide voltage

HML-2318FC-OS1.5 has 6 white 1.5w LEDs and wide voltage

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There are 8 of oval work lights

HML-4215 has 3 white 5w LEDs and wide voltage  
HML-4209 has 3 white 3w LEDs and wide voltage  
HML-4106 has 2 white 3w LEDs and wide voltage  
HML-4110 has 2 white 5w LEDs and wide voltage  
HML-5418 has 6 white 1.5w LEDs and wide voltage  
HML-5430 has 10 white 1.5w LEDs and wide voltage  
HML-3265 has 13 white 5w LEDs and wide voltage  
HML-3039 has 13 white 3w LEDs and wide voltage

There are 3 of slim oval work lights

HML-1918 and HML-1918HL have 6 white 3w LEDs and wide voltage  
HML-1918-OS1.5 has 6 white 1.5w LEDs and wide voltage

There are 3 of slim oval with flush mount work lights

HML-1918FC and HML-1918FCHL have 6 white 3w LEDs and wide voltage  
HML-1918FC-OS1.5 has 6 white 1.5w LEDs and wide voltage

There are 4 of rectangle work lights

HML-5318 has 6 white 1.5w LEDs and wide voltage  
HML-3706 has 33 white 0.2w LEDs and wide voltage  
HML-5545 has 15 white 1.5w LEDs and wide voltage  
HML-5530 has 10 white 1.5w LEDs and wide voltage

There is 1 of rectangle with flush mount work lights

HML-5318FC has 6 white 1.5w LEDs and wide voltage

Type	Exterior LED work light and light bar
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There are 39 light bars

HML-B609 has 3 white 3w LEDs and wide voltage  
HML-B618 has 6 white 3w LEDs and wide voltage  
HML-B645 has 15 white 3w LEDs and wide voltage  
HML-B672 has 24 white 3w LEDs and wide voltage  
HML-B690 has 30 white 3w LEDs and wide voltage  
HML-B6117 has 39 white 3w LEDs and wide voltage  
HML-B560 has 20 white 3w LEDs and wide voltage  
HML-B5120 has 40 white 3w LEDs and wide voltage  
HML-B5180 has 60 white 3w LEDs and wide voltage  
HML-B5240 has 80 white 3w LEDs and wide voltage  
HML-B5300 has 100 white 3w LEDs and wide voltage  
HML-BC460L has 6 white 10w LEDs and wide voltage  
HML-BC4120L has 12 white 10w LEDs and wide voltage  
HML-BC4180L has 18 white 10w LEDs and wide voltage  
HML-BC4240L has 24 white 10w LEDs and wide voltage  
HML-BC4300L has 30 white 10w LEDs and wide voltage  
HML-BCS460 has 6 white 10w LEDs and wide voltage  
HML-BCS4120 has 12 white 10w LEDs and wide voltage  
HML-BCS4180 has 18 white 10w LEDs and wide voltage  
HML-BCS4240 has 24 white 10w LEDs and wide voltage  
HML-BCS4300 has 30 white 10w LEDs and wide voltage  
HML-BC236 has 12 white 3w LEDs and wide voltage  
HML-BC272 has 24 white 3w LEDs and wide voltage  
HML-BC2120 has 40 white 3w LEDs and wide voltage  
HML-BC2180 has 60 white 3w LEDs and wide voltage  
HML-BC2240 has 80 white 3w LEDs and wide voltage  
HML-BC2288 has 96 white 3w LEDs and wide voltage  
HML-BC2300 has 100 white 3w LEDs and wide voltage  
HML-BC2312 has 104 white 3w LEDs and wide voltage  
HML-B1030 has 6 white 5w LEDs and wide voltage  
HML-B1060 has 12 white 5w LEDs and wide voltage  
HML-B1090 has 18 white 5w LEDs and wide voltage  
HML-B1120 has 24 white 5w LEDs and wide voltage  
HML-B1150 has 30 white 5w LEDs and wide voltage  
HML-BCS1060 has 6 white 10w LEDs and wide voltage  
HML-BCS1100 has 10 white 10w LEDs and wide voltage  
HML-BCS1140 has 14 white 10w LEDs and wide voltage  
HML-BCS1200 has 20 white 10w LEDs and wide voltage  
HML-BCS1240 has 24 white 10w LEDs and wide voltage

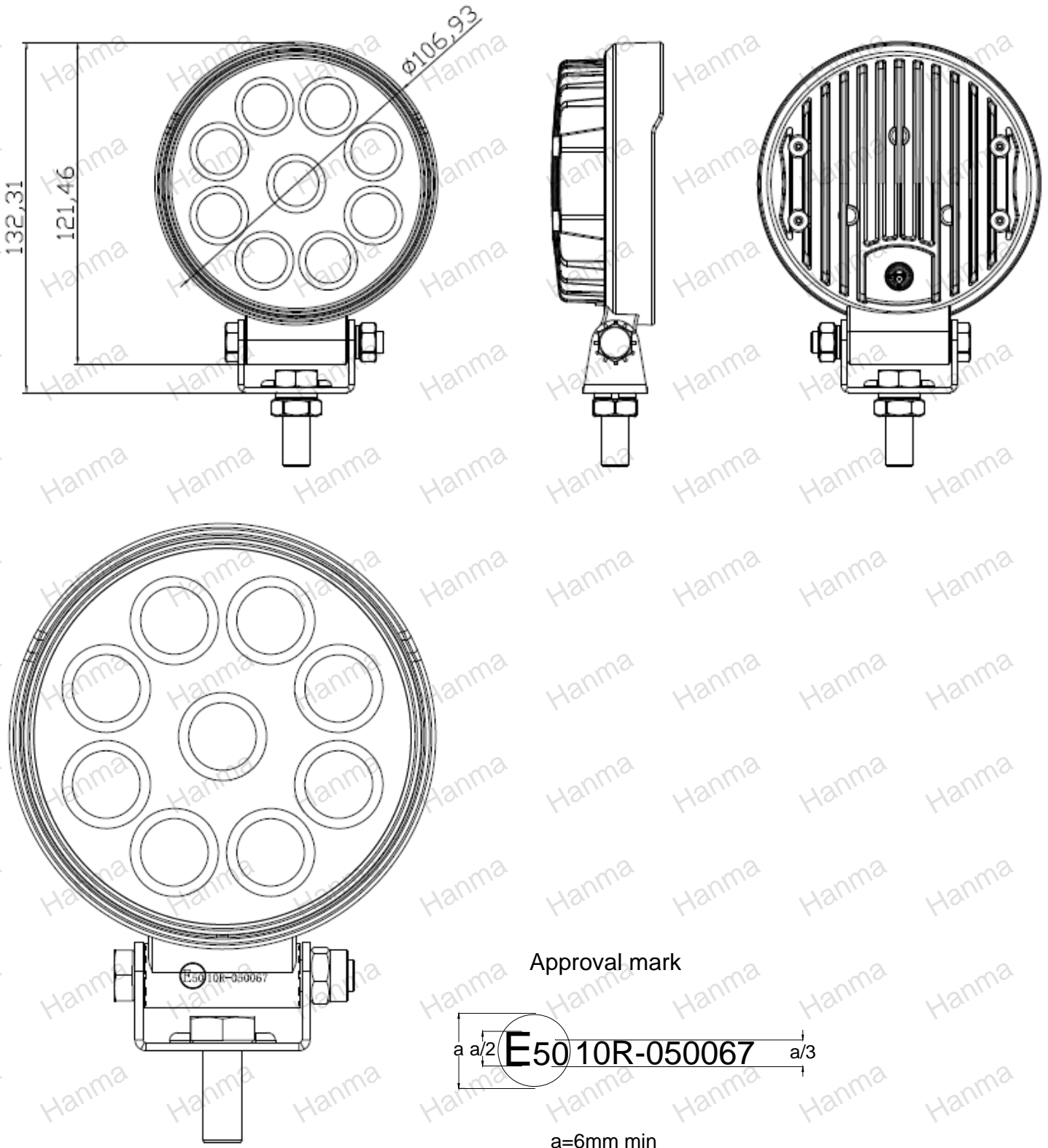
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Appearance Drawing



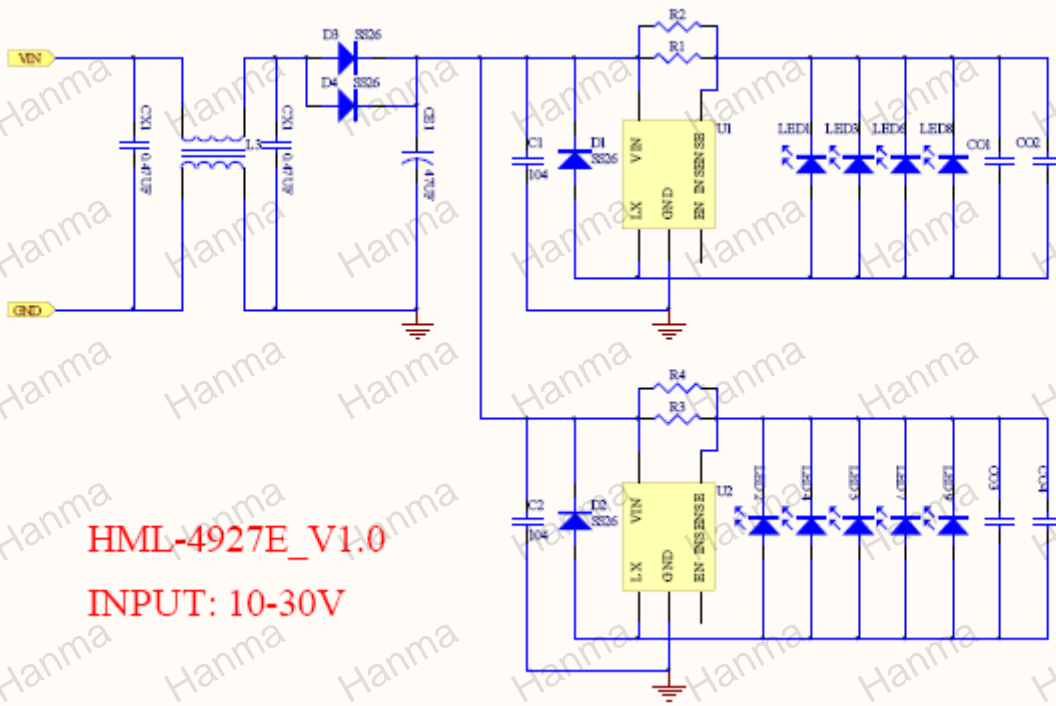
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Assembly Drawing



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Circuit Diagram

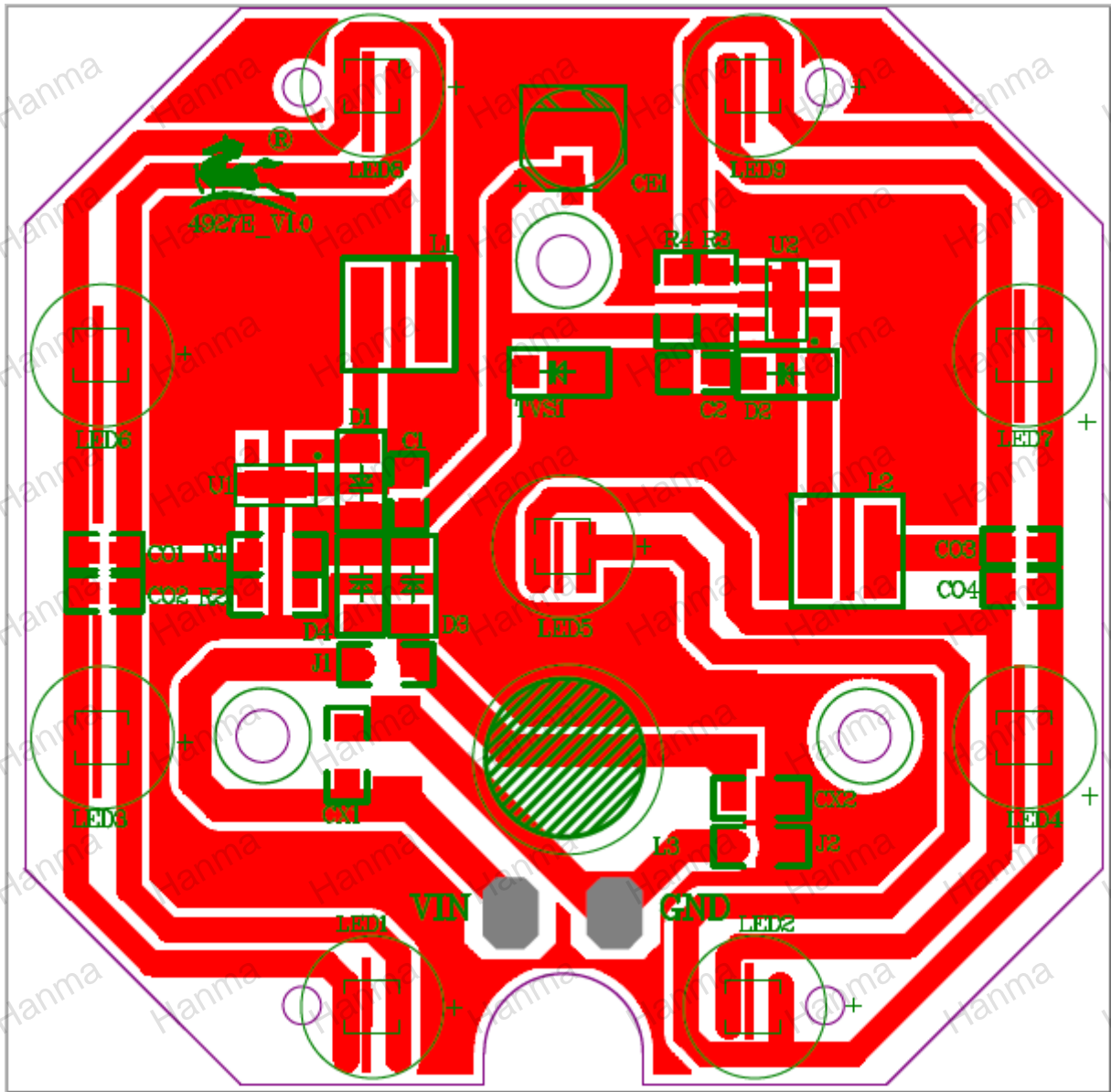


HML-4927E\_V1.0  
 INPUT: 10-30V

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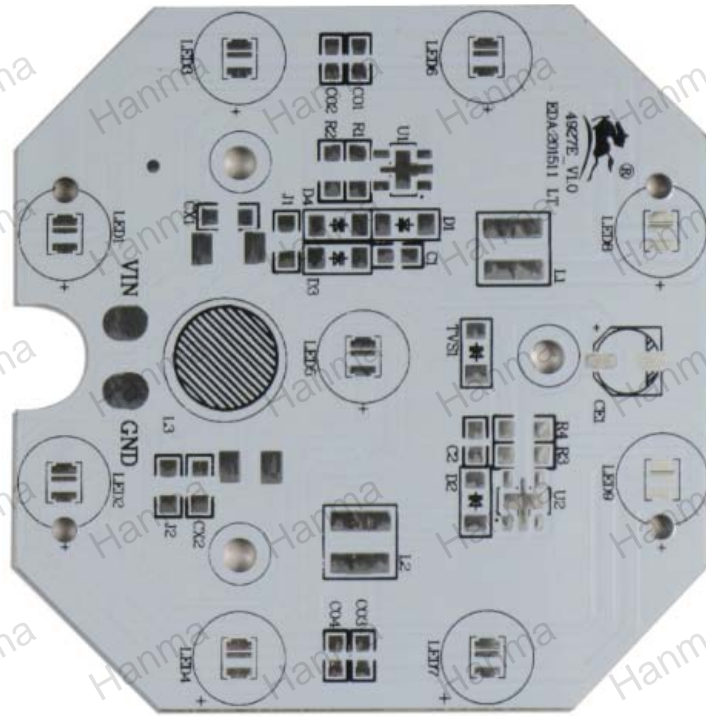


PCB Circuit Diagram



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### PCB Layout



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Guangzhou Hanma Electronics Technology Co., Ltd.  
Exterior LED work light and light bar -00

Application date: November 02, 2015

**Bill of Materials (1)**

Name	Spec.	Unit	Designator	Quantity
5018 housing	121*106*42mm, ADC12, 270g, Spraying matte black	PCS	--	1
M3 Cross round head self-tapping trigonodont screw	M3*6, Iron nickel plating	PCS	--	3
4915/5018/4927/5027 General parts package	304	Bag	--	1
4915 support	U, 201, electrolysis	PCS	--	1
M10 Spring washer	M10*2, stainless steel 304	PCS	--	1
M8 Outside hexagonal screw	M8*55,304	PCS	--	1
M8 Spring washer	M8*2, stainless steel 304	PCS	--	1
M10 Outside hexagonal screw	M10*25, stainless steel 304	PCS	--	1
M10 hexagon nut	M10*8, stainless steel 304	PCS	--	1
M8 hexagon nut	M8*6, stainless steel 304	PCS	--	1
5027 Conjoined Lens	--	PCS	--	1
PC raw material	Shanghai Bayer 2407	KG	--	0.0200
0.5 wire diameter ,wire ends set of in common use	10X12, 60 degrees butadiene-acrylonitrile rubber (NBR) , black	PCS	--	1
Double insulated wires	2*0.5 square millimeter ,0.52m	PCS	--	1
Double core power cord 2*0.5 square millimeter	H05RN-F 2*0.5 square millimeter , black red 300 meter/volume	meter	--	0.52
4927E plate	68*63mm	PCS	--	1
4927Ealuminum substrate V1.0	68*68mm, 2*2 Panel Size After makeup : 136*136mm, thickness of plate 1.5mm, thickness of copper 10Z, heat conductivity coefficient 1.2, White oil black figure	PCS	--	1
IC	CT1820 SOT-89-5L	PCS	U1,U2	2
chip resistor	0.15R 1206 ±1%	PCS	R1	1
chip resistor	0.56R 1206 ±1%	PCS	R4	1
chip resistor	0.5R 1206 ±1%	PCS	R2	1

Type	Exterior LED work light and light bar
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**Bill of Materials (2)**

Name	Spec.	Unit	Designator	Quantity
chip resistor	0R 1206 ±1%	PCS	J1,J2	2
chip resistor	0.11R 1206 ±1%	PCS	R3	1
chip capacitor	0.1uF/50V 0805 ±10%	PCS	C1,C2	2
chip capacitor	1uF/50V 0805 ±10% 125°C TDK X7R	PCS	CO1,CO3	2
SMD aluminum electrolytic capacitor	47uF/35V ±20% 6.3*5.4mm	PCS	CE1	1
SMT inductance	120uH CD54-121K 0.65A 470mΩ R5A CDR <ST>B3.0 F2.6 2UEW- F0.23 5.8*4.5mm	PCS	L1, L2	2
Schottky diode	SS26 DO-214AC 1810 TOS	PCS	D1-D4	4
Transient suppression diode	SMAJ33A CITY SMA	PCS	TVS1	1
LED	OSRAM 1.5W	PCS	LED1-LED9	9
One-component silicone rubber	ST-792H, 50ml	PCS	--	0.004
0215/0118 white-box outer box	280*267*315mm	PCS	--	0.05
0215/0118 white-box	145*130*50mm	PCS	--	1
0215/0118 Membrane pearl cotton bags	180*200mm	PCS	--	1
AB glue, transparent epoxy resin 2:1	heat resistance: More than 120 °C	KG	--	0.025
Cooling paste	White silicone	KG	--	0.025

Type	Exterior LED work light and light bar
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