
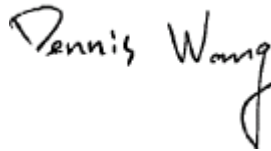


昱奕科技股份有限公司  
MICROLIGHT AUTO PARTS MFG. CO., LTD.  
123-2, PEI TOU VILLAGE, KWAN MIAO TOWN,  
TAINAN HSIEN, TAIWAN, R.O.C.  
TEL: 886-6-595-2441 FAX: 886-6-595-4663

APPLICATION FOR EXTENSION APPROVAL OF A TYPE OF REAR LAMP  
ACCORDING TO ECE REGULATION NO. 07-02 SERIES OF AMENDMENTS

1. Trade name or mark of the device : 
2. Manufacturer's name of the device : M036
3. Manufacturer's name and address : MICROLIGHT AUTO PARTS MFG. CO., LTD.  
123-2, Pei Tou Village, Kwan Miao Town, Tainan  
Hsien, Taiwan, R.O.C.
4. If applicable, name and address of  
manufacturer's representative : Not applicable
5. Category as described by the  
relevant markings : RD-S1D
6. Submitted for approval on(date) : April 28, 2009



Dennis Wang

We herewith confirm that above mentioned application has not been submitted to any other EC/ECE-Member State nor has Member State granted a corresponding type approval.

This application is accompanied by:

The test report





**THE NETHERLANDS  
(N E D E R L A N D)**



**COMMUNICATION**

Concerning <sup>(1)</sup>:

- ~~approval granted~~
- ~~approval extended~~
- ~~approval refused~~
- ~~approval withdrawn~~
- ~~production definitely discontinued~~


of a type of device pursuant to Regulation number 7.

**Approval number: E4-7R-027747**

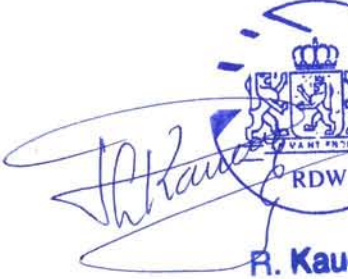
**Extension number: 03**

*Approval mark:*



1. Trade name or mark of the device : 
2. Manufacturer's name for the type of device : M036
3. Manufacturer's name and address : MICROLIGHT AUTO PARTS MFG. CO., LTD.  
123-2, Pei Tou Village, Kwan Miao Town,  
Tainan Hsien, Taiwan, R.O.C.
4. If applicable, name and address of the manufacturer's representative : Not applicable
5. Submitted for approval on : April 28 to May 4, 2009
6. Technical service responsible for conducting approval tests : TÜV Rheinland Kraftfahrt GmbH  
Technologiezentrum Verkehrssicherheit  
Typprüfstelle Fahrzeuge/Fahrzeugteile  
Postfach 91 09 51  
D-51101 Köln / Germany
7. Date of report issued by that service : May 14, 2009



8. Number of report issued by that service : 84-R7-00463/09
9. Concise description <sup>(2)</sup> :
- By category of lamp : RD-S1D
- For mounting either outside or inside or both <sup>(1)</sup> : ~~Outside or inside or both~~
- Colour of light emitted : ~~Red/white~~ <sup>(1)</sup>
- Number and category(ies) of filament lamp(s) : Rear position lamp: 16 LEDs as non-replaceable light sources (0.1W)  
Stop lamp: 8 LEDs as non-replaceable light sources (2.3W)
10. Position of the approval mark : On the outer lens and on the housing of the lamp
11. Reason(s) for extension (if applicable) : Addition of installation position
12. Approval : ~~Granted/extended/refused/withdrawn~~ <sup>(1)</sup>
13. Place : Zoetermeer
14. Date : 20-MAY-2009
15. Signature :
- 
16. The list of documents deposited with the Administrative Service which has granted approval is annexed to this communication and may be obtained on request.

---

<sup>(1)</sup> Strike out what does not apply.

<sup>(2)</sup> For lamps with non-replaceable light sources indicate the number and the total wattage of the light sources.

Type : M036  
Manufacturer : MICROLIGHT AUTO PARTS MFG. CO., LTD.

## TEST REPORT

according to ECE-Regulation

### Uniform provisions concerning the approval of front and rear position (side) lamps, stop-lamps and end-outline marker lamps for power-driven vehicles and their trailers

No.: **ECE-R7**

including all amendments until

No.: **02 series of amendments, suppl. 11**

Previously granted	
ECE – approval	: E4-7R-027747 Ext. No. 02

Structure of report:


0. General information
1. Test object(s) and general test information
2. Test minutes
3. Remark concerning tested object(s)
4. Appendices
5. Statement of conformity

The Test Report shall be reproduced and published in full by the client only. It shall however be reproduced partially with the written permission of the Testing Laboratory only.

Type : M036  
Manufacturer : MICROLIGHT AUTO PARTS MFG. CO., LTD.

---

## 0. General information

- 0.1. Trade mark or trade name of the lamp : 
- 0.2. Manufacturer's name for the type of the lamp : M036
- 0.3. Name and address of the manufacturer : MICROLIGHT AUTO PARTS MFG. CO., LTD.  
123-2, Pei Tou Village, Kwan Miao Town,  
Tainan Hsien, Taiwan, R.O.C.
- 0.4. Name and address of the manufacturer's authorised representative : Not applicable
- 0.5. No. of information document : M036-S2  
date of issue : May 18, 2005  
date of last amendment : April 28, 2009

Type : M036  
Manufacturer : MICROLIGHT AUTO PARTS MFG. CO., LTD.

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## 1. Test object(s) and general test information

### 1.1. Test object(s)

- Identification no. : Not applicable
- Model : M036
- Remark :
  - 16 LEDs as non-replaceable light sources for rear position lamp.
  - 8 LEDs as non-replaceable light sources for stop lamp
  - This lamp has 2 versions which differ in the outer lens colour.
  - This lamp has 4 installation angles.
  - For this extension application, only the red outer lens is tested and only 1 installation position (shown in the drawing) is tested. The lamp is incorporated with the base according to the drawing provided by the manufacturer.

### 1.2. General test information

- 1.2.1 Order issued by (if different from manufacturer) : --
- 1.2.2 Test object received on : --
- 1.2.3 Test date : April 28 to May 4, 2009
- 1.2.4 Test site : Kwan-Miao / Taiwan
- 1.2.5 Remark : The results of the test refer exclusively to the objects mentioned under point 1.1. of this report.

Type : M036  
Manufacturer : MICROLIGHT AUTO PARTS MFG. CO., LTD.

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## 2. Test minutes

**2.1. Test facilities** : The measurement equipment used was in compliance with the test requirements.

**2.2. Test results** : The lamp has been tested according to the amendments mentioned in Appendix 0. The test results of the previous applications are carried over from the basic report. Only the test result of the lamp incorporating the base is described in the test report.

Markings : The trade mark is marked clearly legible and indelible on the outer lens and on the housing of the lamp.

The rated voltage and rated wattage are clearly legible and indelible marked on the housing of the lamp.

Space for the approval mark and for the additional symbols is provided on the outer lens and on the housing of the lamp.

**2.3. General specifications** : The lamp is designed and made that under normal use their satisfactory operation is ensured and they retain the required characteristics.

All measurements, photometric and colorimetric, on lamps equipped with non-replaceable light sources (filament lamps and others) were made at ~~6.75V~~/13.5V/~~28.0V~~.

The colour of the light emitted inside the field of the light distribution grid defined in paragraph 2 of Annex 4 is within the limits of the coordinates prescribed in Annex 5 of the Regulation.

**2.4. Photometric tests** : The light intensity was measured after 1 minute burning period and after 30 minutes burning in reference axis. The distribution of the light intensity after 1 minute burning period was calculated using the ratio of the two described measurements. The light intensity and its distribution are in compliance with the requirement after 1 minute burning period and after 30 minutes burning period.

Type : M036  
Manufacturer : MICROLIGHT AUTO PARTS MFG. CO., LTD.

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The light distribution angles and levels of intensity have been measured in accordance with Annex 4 of the Regulation, based on the manufacturer's indication of the centre of reference and axis of reference.

In case of different intensities of light emitted required by the Regulation, the evaluations are based on the most unfavourable limits specified.

The rear position and stop lamp contains more than one light source. The lamp complies with the requirement of footnote 2 to paragraph 6.1 of the Regulation.

The rear position lamp is reciprocally incorporated with the stop lamp. The ratio between the luminous intensities of the two lamps when turned on simultaneously and the intensity of the position lamp when turned on alone is greater than 5:1 in the field required.



Type : M036  
 Manufacturer : MICROLIGHT AUTO PARTS MFG. CO., LTD.

Results of photometric tests of the rear position lamp

Version A: Red outer lens

[measured after 1 minute burning period when all light sources lit]

	light intensity of the lamps in reference axis [cd]	allowable maximum	required minimum
sample no. 1 (left side)	5.2	8.5	4
sample no. 2 (right side)	5.1	8.5	4

[measured after 30 minutes burning period when all light sources lit]

distribution of the intensity of the lamps in [cd]								
horizontal angle		L20°	L10°	L5°	V	R5°	R10°	R20°
vertical angle required minimum intensity	U10°			0.8		0.8		
	U5°	0.4	0.8		2.8		0.8	0.4
	H		1.4	3.6	4	3.6	1.4	
	D5°	0.4	0.8		2.8		0.8	0.4
	D10°			0.8		0.8		
vertical angle sample no. 1 (left side)	U10°			3.3		3.2		
	U5°	1.3	3.4		4.7		2.7	1.5
	H		3.3	4.6	5.3	4.4	2.9	
	D5°	1.2	2.6		4.0		2.8	1.3
	D10°			2.4		2.8		
vertical angle sample no. 2 (right side)	U10°			3.0		2.7		
	U5°	1.5	2.9		3.8		2.8	1.4
	H		2.9	4.3	5.1	4.4	3.2	
	D5°	1.4	2.7		4.9		3.1	1.3
	D10°			3.0		3.0		

	sample no. 1	sample no. 2	allowable maximum	required minimum
maximum intensity [cd]	5.5	5.6	8.5	--
minimum intensity in the field defined in Annex 1 of the Regulation [cd]	0.20	0.10	--	0.05

Type : M036  
 Manufacturer : MICROLIGHT AUTO PARTS MFG. CO., LTD.

Results of photometric tests of the stop lamp

Version A: Red outer lens

[measured after 1 minute burning period when all light sources lit]

	light intensity of the lamps in reference axis [cd]	allowable maximum	required minimum
sample no. 1 (left side)	89.0	130	60
sample no. 2 (right side)	86.8	130	60

[measured after 30 minutes burning period when all light sources lit]

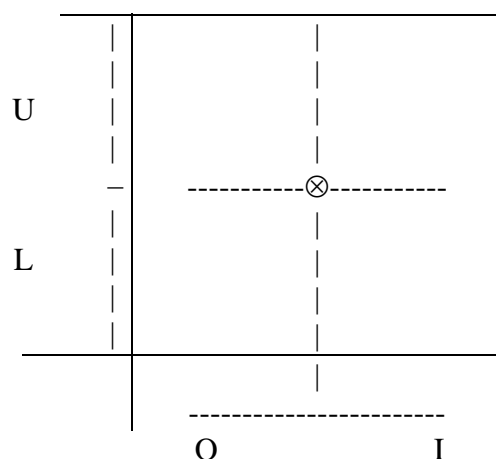
distribution of the intensity of the lamps in [cd]								
horizontal angle		L20°	L10°	L5°	V	R5°	R10°	R20°
vertical angle required minimum intensity	U10°			12		12		
	U5°	6	12		42		12	6
	H		21	54	60	54	21	
	D5°	6	12		42		12	6
	D10°			12		12		
vertical angle sample no. 1 (left side)	U10°			35.3		30.7		
	U5°	14.5	36.9		47.7		27.6	15.9
	H		36.6	55.7	65.4	54.9	31.2	
	D5°	12.8	28.6		49.0		31.0	13.6
	D10°			26.3		33.8		
vertical angle sample no. 2 (right side)	U10°			35.2		28.6		
	U5°	13.7	32.1		45.1		29.3	16.4
	H		31.8	55.0	65.5	54.2	34.9	
	D5°	15.7	29.4		52.6		36.0	14.6
	D10°			31.4		34.7		

	sample no. 1	sample no. 2	allowable maximum	required minimum
maximum intensity [cd]	66.8	68.4	130	--
minimum intensity in the field defined in Annex 1 of the Regulation [cd]	0.60	0.80	--	0.3

Type : M036  
 Manufacturer : MICROLIGHT AUTO PARTS MFG. CO., LTD.

**2.5. Illuminating surface**

: Vertical and horizontal outlines of the illuminating surface of the light-signalling device in relation to the centre of reference and in accordance with Annex 3 of the Regulation ECE-R48.



Version A: Red outer lens

Installation angle	function	upper boundary (U) [mm]	lower boundary (L) [mm]	outer boundary (O) [mm]	outer boundary (I) [mm]
Type 1	rear position lamp	91	1	45	45
	stop lamp	42	1	46	46
Type 2	rear position lamp	45	45	1	91
	stop lamp	46	46	1	42
Type 3	rear position lamp	1	91	45	45
	stop lamp	1	42	46	46
Type 4	rear position lamp	45	45	91	1
	stop lamp	46	46	42	1

Version B: Clear outer lens

Type : M036  
 Manufacturer : MICROLIGHT AUTO PARTS MFG. CO., LTD.

installation angle	function	upper boundary (U) [mm]	lower boundary (L) [mm]	outer boundary (O) [mm]	outer boundary (O) [mm]
Type 1	rear position lamp	90	0	44	44
	stop lamp	41	0	45	45
Type 2	rear position lamp	44	44	0	90
	stop lamp	45	45	0	41
Type 3	rear position lamp	0	90	44	44
	stop lamp	0	41	45	45
Type 4	rear position lamp	44	44	90	0
	stop lamp	45	45	41	0

## 2.6. Explanatory note

: ~~This report describes the examination of the rear position and stop lamp as a part of a lamp device.~~

For the examination of the other lamp of the device, refer to the following report:

Type of lamp	Test Report No.
--------------	-----------------

--

--

## 2.7. Variants and components

: Versions A and B

Type : M036  
Manufacturer : MICROLIGHT AUTO PARTS MFG. CO., LTD.

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### 3. Remark concerning tested object(s)

All versions of the lamp type as stated in the information document are covered with the tested lamp version(s) and test object(s) respectively.

### 4. Appendices

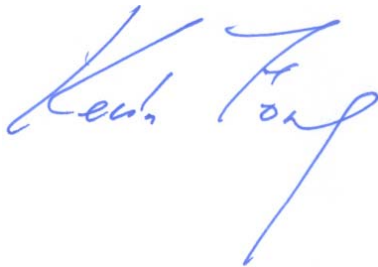
**0 List of modifications**

**1 Information folder No.** : M036-S2 (1 page)  
**(excluding drawings)**

### 5. Statement of conformity

The above mentioned information folder and the type described in that comply with the requirements mentioned on page 1.

Cologne, May 14, 2009  
BL/KFO



M.S.M.E. K. Fong

Type : M036  
Manufacturer : MICROLIGHT AUTO PARTS MFG. CO., LTD.

---

**List of modifications**

**Appendix 0**

**Correction of** : --

**Modification of** : --

**Addition of** : Installation position (incorporating with the base)  
according to the manufacturer's drawing

**Deletion of** : --

**Application Type: M036****Extension Application Date: April 28, 2009**

<b>Application regulation:</b>	ECE-R7-02 (category RD-S1D)
--------------------------------	-----------------------------

**1. Light Sources**

Function	Light Color	Rated Voltage	Rated Wattage	Non-Replaceable Light Source
Rear position lamp	Red	12V	0.1W	16 LEDs
Stop lamp	Red	12V	2.3W	8LEDs

**2. Construction and Material**

Construction	Material	Remark
Outer lens	PMMA	Version A: Red Version B: Colourless
Reflector	Plastic	Aluminum vacuum coated
Housing	Plastic	
Bezel	PC	Optional part
Base	Plastic	
PCB	QMTS2	

**3. The locations of the trade mark(s), the lamp designation mark(s) and the approval mark(s) are indicated in the following drawing(s) attached:**

M036-S-1, M036-S-2, M036-S-3, M036-S-4, M036-S-5, M036-S-6, M036-S-7, M036-S-8, M036-S-9,  
M036-S1-1, M036-S1-2, M036-S1-3, M036-S1-4, M036-S2-1, M036-S2-2, M036-S2-3, M036-S2-4 #

**4. Name and address of manufacturer:**

MICROLIGHT AUTO PARTS MFG. CO., LTD.  
123-2, Pei Tou Village, Kwan Miao Town, Tainan Hsien, Taiwan, R.O.C.

**5. Name and address of representative of manufacturer:**

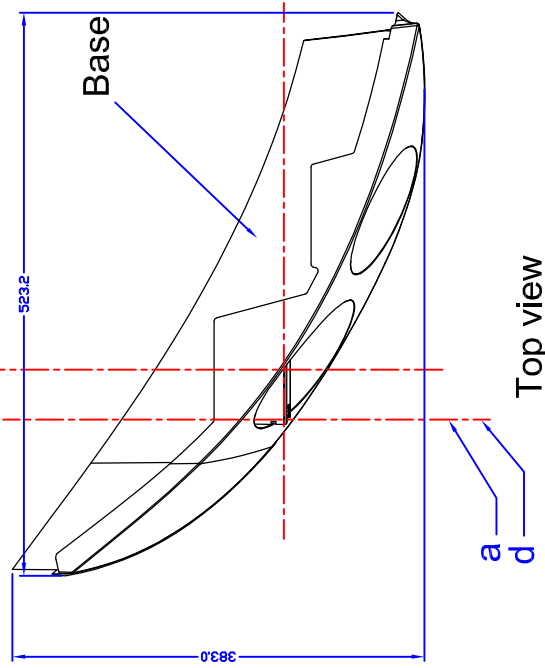
Not applicable

**6. Remarks**

Date: April 28, 2009  
Place: Tainan Hsien  
Person in charge: Dennis Wang

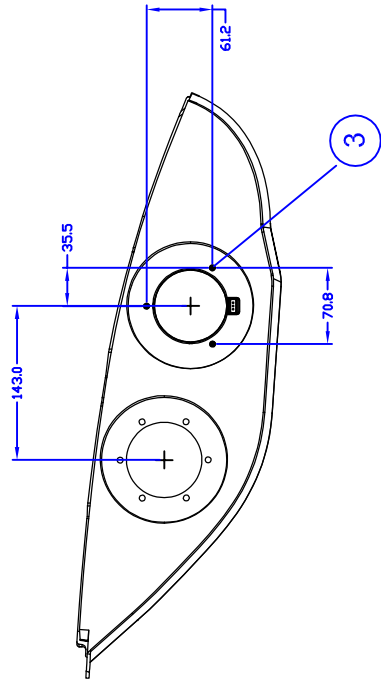


REAR OF VEHICLE

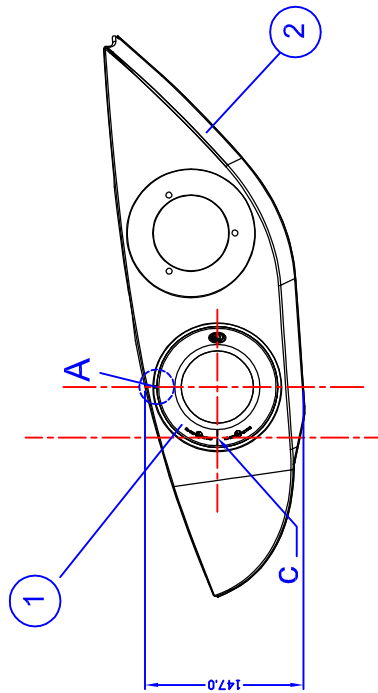


Top view

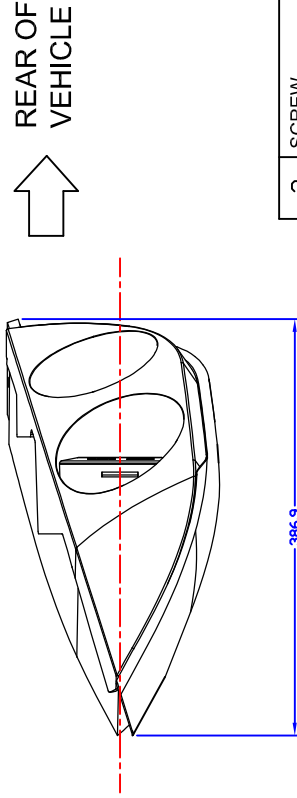
This drawing is for left side only  
 a-Longitudinal plane of Vehicle.  
 b-Horizontal plane of Vehicle.  
 c-Center of reference.  
 d-Axis of reference.



Back side view

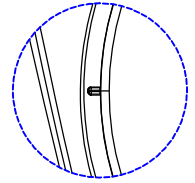


Front view



Side view

A



3	SCREW
2	BASE
1	M036 STOP/POSITION
ND	CONSTRUCTION
TOL UNLESS SPECIED X=±0.5 X,X=±0.2 XXX=±0.1	
DWG	MICROLIGHT
DR	Dennis
APPR	
	SCALE 1:4
	UNIT,MM
	DWG NO
	M036-S2-1



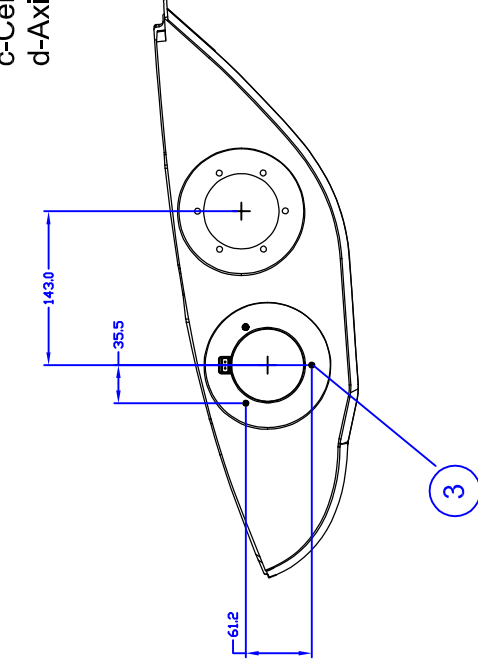


REAR OF VEHICLE

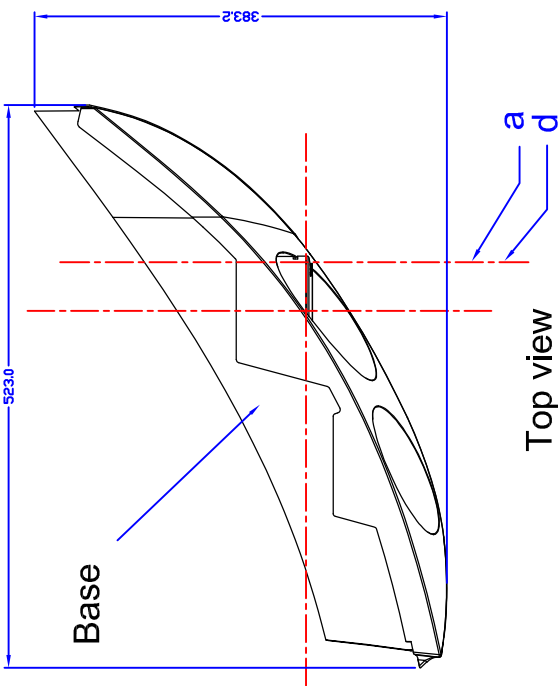


This drawing is for right side only  
 a-Longitudinal plane of Vehicle.  
 b-Horizontal plane of Vehicle.  
 c-Center of reference.  
 d-Axis of reference.

#

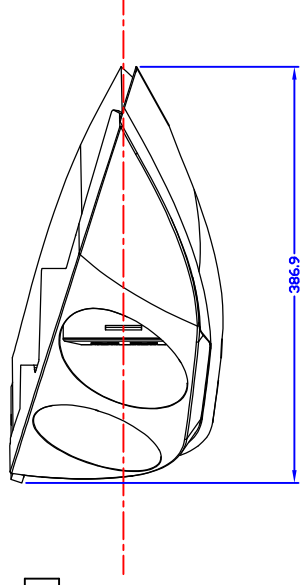


Back side view

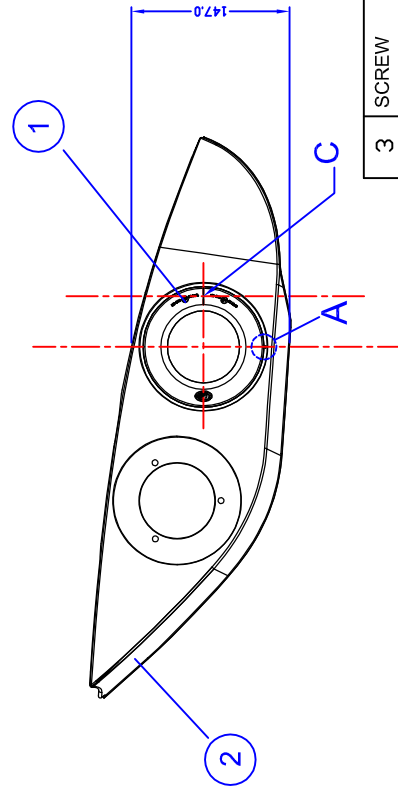


Top view

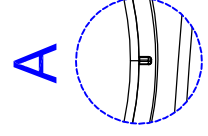
REAR OF VEHICLE



Side view



Front view



A

3	SCREW
2	BASE
1	M036 STOP/POSITION
ND	CONSTRUCTION
TOL UNLESS SPECIED X=+0.5 X.X=+0.2 X.XX=+0.1	
DWG	MICROLIGHT
DR	Dennis
APPR	
	SCALE 1:4
	UNIT,MM
	DWG NO
	M036-S2-2



#

This DRAWING shall be applied for right side installation condition

a-Longitudinal plane of Vehicle.

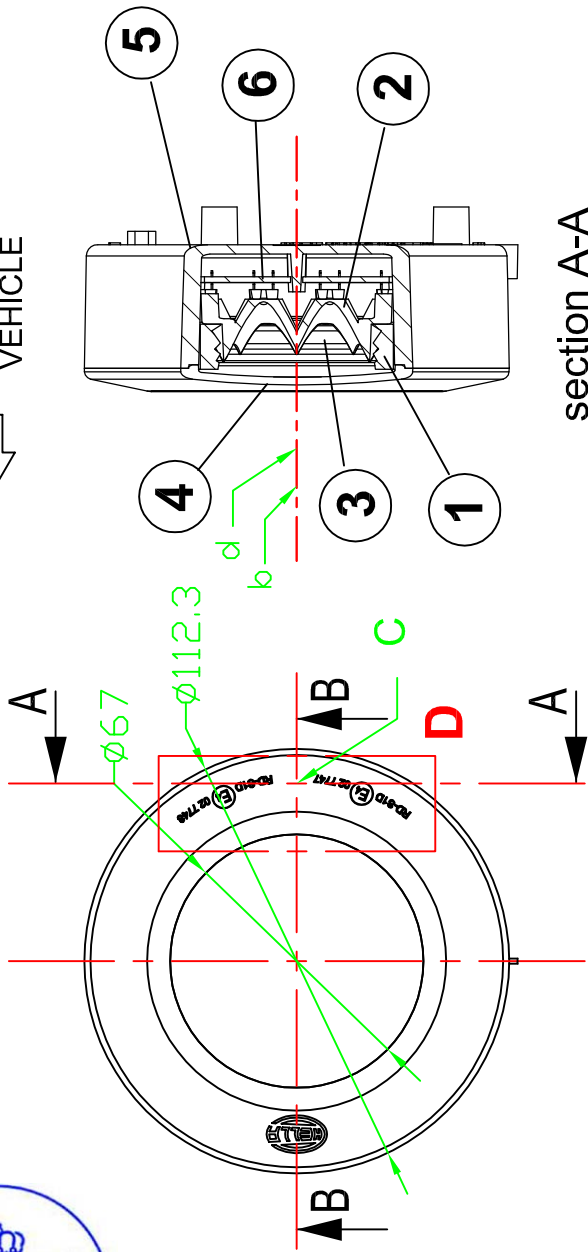
b-Horizontal plane of Vehicle.

c-Center of reference.

d-Axis of reference.



REAR OF VEHICLE

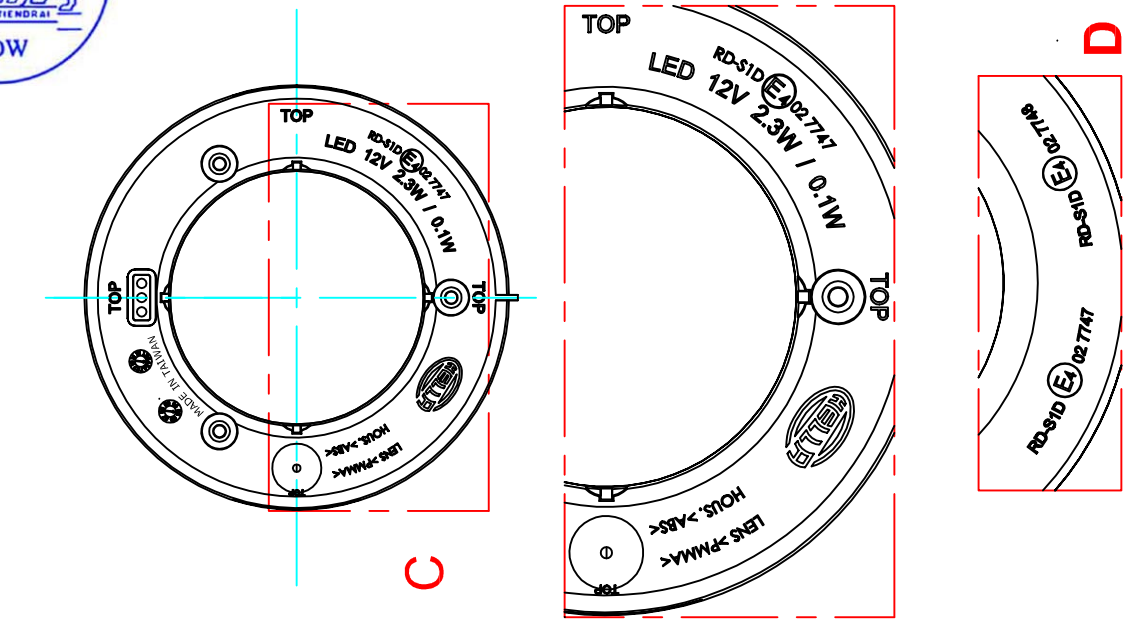


section A-A

NOTE:

Outer lens is sonic welded to housing

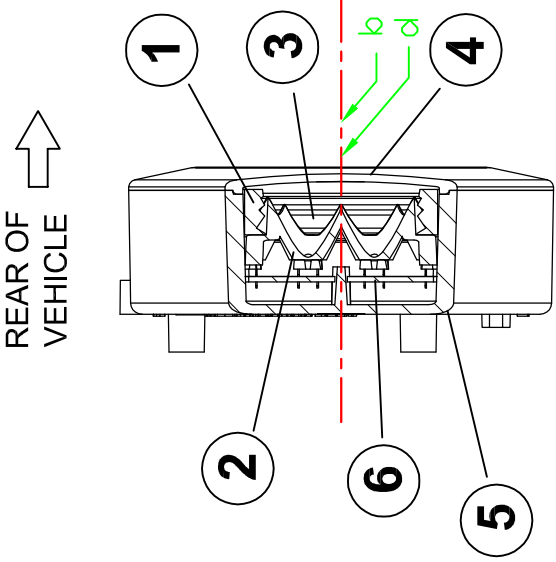
6	LED BULB
5	HOUSING
4	OUTER LENS
3	REFLECTOR 3
2	REFLECTOR 2
1	REFLECTOR 1
NO	CONSTRUCTION
MICROLIGHT	TOL UNLESS SPECIED X=±0.5 X.X=±0.2 X.XX=±0.1
DWG	Dennis SCALE 1:1
DR	UNIT,MM
APPR	DWG M036-S2-3



section B-B



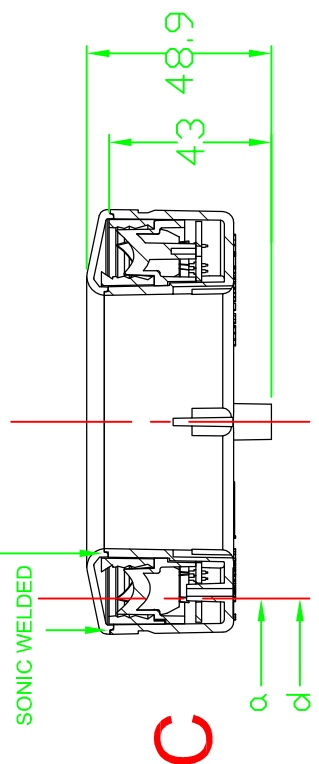
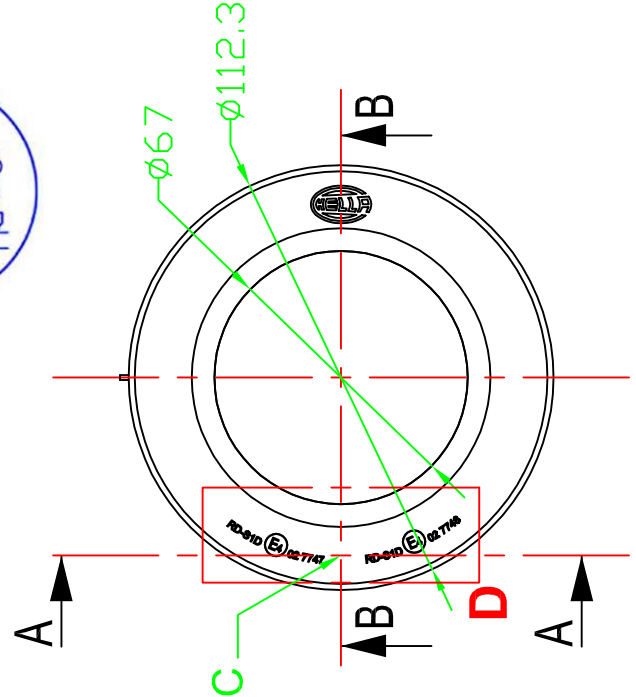
This DRAWING shall be applied for left side installation condition #  
 a-Longitudinal plane of Vehicle.  
 b-Horizontal plane of Vehicle.  
 c-Center of reference.  
 d-Axis of reference.



section A-A

NOTE:  
 Outer lens is sonic welded to housing

6	LED BULB
5	HOUSING
4	Outer lens
3	REFLECTOR 3
2	REFLECTOR 2
1	REFLECTOR 1
NO	CONSTRUCTION
MICROLIGHT	TOL UNLESS SPECIED X=±0.5 X.X=±0.2 X.XX=±0.1
DWG	Dennis
DR	SCALE 1:1
APPR	UNIT,MM
	DWG M036-S2-4



section B-B

