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	:	HELLA
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. Brief description		
5.1 Category as described by the relevant markings	:	RD-S1D
5.2 Colour of light emitted	:	Red
5.3 Submitted for approval on(date)	:	December 20, 2005

Dennis Wang

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 accompanted by:
The test report

JE MAINTIENDRAI
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THE NETHERLANDS
(N E D E R L A N D)

E4

COMMUNICATION

Concerning [1]:

- ~~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- ~~approval withdrawn~~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: 01**

Approval mark:

RD-S1D E4 *02 7747*

1.	Trade name or mark of the device	:	HELLA
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	:	December 20, 2005 to January 18, 2006
6.	Technical service responsible for conducting approval tests	:	TÜV Kraftfahrt GmbH Technologiezentrum Verkehrssicherheit Typprüfstelle Fahrzeuge/Fahrzeugteile Postfach 91 09 51 D-51101 Köln/ Germany
7.	Date of report issued by that service	:	February 13, 2006

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8.	Number of report issued by that service	: 84-R7-01334/05
9.	Concise description [2]	
	By category of lamp	: RD-S1D
	For mounting either outside or inside or both [1]	: Outside ~~or inside or both~~
	Colour of light emitted	: Red~~/selective yellow/white~~ [1]
	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)
	Special supply voltage	: Not applicable
	Application of additional supply system	: ~~Yes/~~no [1]
	Specification of this supply system	: Not applicable
	Switched power supply: - duty cycle - peak to peak voltage - and/or effective voltage	 : Not applicable : Not applicable : Not applicable
	Light source module	: ~~Yes/~~no [1]
	Light source module specific identification code	: Not applicable
	Geometrical conditions of installation and relating variations, if any	: Refer to the drawing of the information folder
	Only for limited mounting height of equal to or less than 750 mm above the ground	: ~~Yes/~~no [1]
10.	Position of the approval mark	: On the outer lens and on the housing of the lamp
11.	Reason(s) for extension (if applicable)	: (1) Modification of electrical circuit (2) Modification of optional bezel
12.	Approval	: ~~Granted~~/extended~~/refused/withdrawn~~ [1]
13.	Place	: Zoetermeer
14.	Date	: 27-Feb-2006

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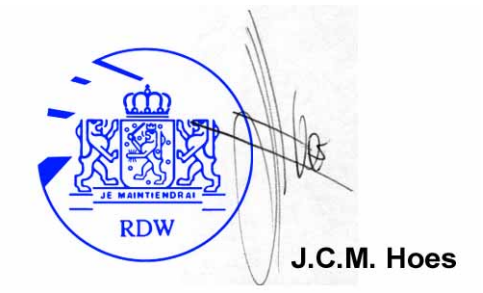
15. Signature :



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.

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(1) Strike out what does not apply.
(2) For lamps with non-replaceable light sources indicate the number and the total wattage of the light sources.

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 motor vehicles (except motor cycles) and their trailers

No.: **ECE-R7**

including all amendments until

No.: **02 series of amendments, suppl. 8**

Previously granted	
ECE – approval	: E4-7R-027747

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

0. General information

0.1.	Trademark or trade name of the lamp	: HELLA
0.2.	Manufacturer's name for the type of the lamp	: HELLA 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 date of issue date of last amendment	: M036-S : May 18, 2005 : December 20, 2005

1. Test object(s) and general test information

1.1. Test object(s)

- Identification no. : Not applicable

- Model : M036

- Remark : - Rear position and stop lamp
  - 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 colours.
  - This lamp has 4 installation angles.

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 : December 20, 2005 to January 18, 2006

1.2.4 Test site : Tainan / Taiwan

1.2.5 Remark : The results of the test refer exclusively to the objects mentioned under point 1.1. of this report.

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 photometric values were carried over from the basic report because it was selected as representative for covering the new circuit design.

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 is clearly legible and indelible marked on the lamp housing.

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 lamps are designed and made that under normal use their satisfactory operation is ensured and they retain the required characteristics.

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.

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

The lamp complies with the minimum intensity requirements when any one light source has failed.

Results of photometric tests of the rear position lamp

Version A: Red outer lens (Installation angle: Type 1)
[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	8.2	8.5	4
sample no. 2	7.6	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		L20º	L10º	L5º	V	R5º	R10º	R20º
vertical angle required minimum intensity	U10º			0.8		0.8		
	U5º	0.4	0.8		2.8		0.8	0.4
	H		1.4	3.6	4	3.6	1.4	
	D5º	0.4	0.8		2.8		0.8	0.4
	D10º			0.8		0.8		
vertical angle sample no. 1	U10º			3.8		4.1		
	U5º	2.1	3.8		5.7		4.2	2.4
	H		4.1	6.2	7.0	6.2	4.6	
	D5º	2.1	3.9		6.5		4.5	2.0
	D10º			4.0		4.3		
vertical angle sample no. 2	U10º			4.2		3.9		
	U5º	1.8	4.6		4.8		4.0	2.6
	H		5.4	5.9	6.3	4.8	4.4	
	D5º	1.8	4.9		7.0		4.5	2.4
	D10º			5.1		5.0		

	sample no. 1	sample no. 2	allowable maximum	required minimum
maximum intensity [cd]	7.8	7.3	8.5	--
minimum intensity in the fields defined in Annex 1 of the Regulation [cd]	0.10	0.10	--	0.05

Results of photometric tests of the rear position lamp

Version A: Red outer lens (Installation angle: Type 2)
[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	8.4	8.5	4
sample no. 2	6.7	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		L20º	L10º	L5º	V	R5º	R10º	R20º
vertical angle required minimum intensity	U10º			0.8		0.8		
	U5º	0.4	0.8		2.8		0.8	0.4
	H		1.4	3.6	4	3.6	1.4	
	D5º	0.4	0.8		2.8		0.8	0.4
	D10º			0.8		0.8		
vertical angle sample no. 1	U10º			4.5		4.5		
	U5º	2.0	4.3		7.2		4.5	2.0
	H		4.8	6.3	7.6	5.8	4.6	
	D5º	1.7	4.2		5.0		4.0	2.0
	D10º			3.9		3.6		
vertical angle sample no. 2	U10º			3.7		4.6		
	U5º	2.4	3.7		4.6		5.0	2.0
	H		3.8	4.7	5.9	7.0	5.7	
	D5º	1.9	3.8		5.7		5.1	1.9
	D10º			4.2		4.8		

	sample no. 1	sample no. 2	allowable maximum	required minimum
maximum intensity [cd]	7.9	7.3	8.5	--
minimum intensity in the fields defined in Annex 1 of the Regulation [cd]	0.20	0.10	--	0.05

Results of photometric tests of the rear position lamp

Version A: Red outer lens (Installation angle: Type 3)
[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	8.3	8.5	4
sample no. 2	6.9	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		L20º	L10º	L5º	V	R5º	R10º	R20º
vertical angle required minimum intensity	U10º			0.8		0.8		
	U5º	0.4	0.8		2.8		0.8	0.4
	H		1.4	3.6	4	3.6	1.4	
	D5º	0.4	0.8		2.8		0.8	0.4
	D10º			0.8		0.8		
vertical angle sample no. 1	U10º			4.7		4.7		
	U5º	2.2	4.5		6.2		4.6	2.2
	H		4.6	5.8	7.2	6.0	4.5	
	D5º	2.3	3.8		5.2		3.9	2.0
	D10º			3.7		3.9		
vertical angle sample no. 2	U10º			5.2		5.8		
	U5º	2.5	4.3		6.8		5.4	2.0
	H		4.4	4.8	5.6	5.8	5.3	
	D5º	2.2	3.7		4.7		4.6	1.8
	D10º			3.7		4.3		

	sample no. 1	sample no. 2	allowable maximum	required minimum
maximum intensity [cd]	7.3	7.8	8.5	--
minimum intensity in the fields defined in Annex 1 of the Regulation [cd]	0.10	0.10	--	0.05

Results of photometric tests of the rear position lamp

Version A: Red outer lens (Installation angle: Type 4)
[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	8.1	8.5	4
sample no. 2	7.0	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		L20º	L10º	L5º	V	R5º	R10º	R20º
vertical angle required minimum intensity	U10º			0.8		0.8		
	U5º	0.4	0.8		2.8		0.8	0.4
	H		1.4	3.6	4	3.6	1.4	
	D5º	0.4	0.8		2.8		0.8	0.4
	D10º			0.8		0.8		
vertical angle sample no. 1	U10º			4.3		4.1		
	U5º	2.0	4.5		6.1		3.9	2.4
	H		5.0	5.8	7.2	5.5	4.1	
	D5º	1.9	4.5		5.7		3.8	2.3
	D10º			4.3		3.9		
vertical angle sample no. 2	U10º			4.9		4.4		
	U5º	2.1	5.6		6.2		3.9	2.5
	H		5.9	6.5	5.8	4.8	3.9	
	D5º	2.1	5.1		4.5		3.7	2.6
	D10º			4.7		3.9		

	sample no. 1	sample no. 2	allowable maximum	required minimum
maximum intensity [cd]	7.2	7.4	8.5	--
minimum intensity in the fields defined in Annex 1 of the Regulation [cd]	0.10	0.10	--	0.05

Results of photometric tests of the rear position lamp

Version B: Clear outer lens (Installation angle: Type 1)

[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	8.4	8.5	4
sample no. 2	7.1	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		L20º	L10º	L5º	V	R5º	R10º	R20º
vertical angle required minimum intensity	U10º			0.8		0.8		
	U5º	0.4	0.8		2.8		0.8	0.4
	H		1.4	3.6	4	3.6	1.4	
	D5º	0.4	0.8		2.8		0.8	0.4
	D10º			0.8		0.8		
vertical angle sample no. 1	U10º			4.4		4.6		
	U5º	2.1	4.5		5.8		4.4	2.6
	H		4.8	6.4	7.4	6.6	4.9	
	D5º	2.1	4.7		6.5		4.8	2.2
	D10º			4.5		4.9		
vertical angle sample no. 2	U10º			4.5		4.3		
	U5º	1.8	4.9		5.0		4.3	2.7
	H		5.3	6.3	6.7	5.0	4.5	
	D5º	2.1	5.3		7.6		4.7	2.5
	D10º			5.3		5.4		

	sample no. 1	sample no. 2	allowable maximum	required minimum
maximum intensity [cd]	7.6	7.3	8.5	--
minimum intensity in the fields defined in Annex 1 of the Regulation [cd]	0.10	0.10	--	0.05

Results of photometric tests of the rear position lamp

Version B: Clear outer lens (Installation angle: Type 2)
[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	8.5	8.5	4
sample no. 2	7.0	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		L20º	L10º	L5º	V	R5º	R10º	R20º
vertical angle required minimum intensity	U10º			0.8		0.8		
	U5º	0.4	0.8		2.8		0.8	0.4
	H		1.4	3.6	4	3.6	1.4	
	D5º	0.4	0.8		2.8		0.8	0.4
	D10º			0.8		0.8		
vertical angle sample no. 1	U10º			4.7		4.8		
	U5º	2.2	4.7		7.9		4.7	2.2
	H		5.1	6.8	8.2	6.1	4.7	
	D5º	1.8	4.7		5.6		4.4	2.1
	D10º			4.4		3.9		
vertical angle sample no. 2	U10º			4.4		4.8		
	U5º	2.6	4.1		5.1		5.4	2.2
	H		4.5	5.2	6.6	7.9	6.1	
	D5º	2.1	4.4		6.2		5.6	2.1
	D10º			4.6		5.4		

	sample no. 1	sample no. 2	allowable maximum	required minimum
maximum intensity [cd]	8.5	7.9	8.5	--
minimum intensity in the fields defined in Annex 1 of the Regulation [cd]	0.50	0.10	--	0.05

Results of photometric tests of the rear position lamp

Version B: Clear outer lens (Installation angle: Type 3)
[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	8.5	8.5	4
sample no. 2	8.1	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		L20º	L10º	L5º	V	R5º	R10º	R20º
vertical angle required minimum intensity	U10º			0.8		0.8		
	U5º	0.4	0.8		2.8		0.8	0.4
	H		1.4	3.6	4	3.6	1.4	
	D5º	0.4	0.8		2.8		0.8	0.4
	D10º			0.8		0.8		
vertical angle sample no. 1	U10º			4.7		4.4		
	U5º	2.3	4.8		6.7		4.5	2.4
	H		4.9	6.7	7.3	6.6	4.8	
	D5º	2.5	4.7		5.8		4.4	2.4
	D10º			4.5		4.4		
vertical angle sample no. 2	U10º			5.5		5.9		
	U5º	2.8	4.7		7.5		5.4	2.3
	H		4.7	5.1	5.9	6.2	5.6	
	D5º	2.4	4.1		4.9		5.0	1.9
	D10º			4.0		4.7		

	sample no. 1	sample no. 2	allowable maximum	required minimum
maximum intensity [cd]	7.7	7.8	8.5	--
minimum intensity in the fields defined in Annex 1 of the Regulation [cd]	0.20	0.10	--	0.05

Results of photometric tests of the rear position lamp

Version B: Clear outer lens (Installation angle: Type 4)
[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	8.1	8.5	4
sample no. 2	7.5	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		L20º	L10º	L5º	V	R5º	R10º	R20º
vertical angle required minimum intensity	U10º			0.8		0.8		
	U5º	0.4	0.8		2.8		0.8	0.4
	H		1.4	3.6	4	3.6	1.4	
	D5º	0.4	0.8		2.8		0.8	0.4
	D10º			0.8		0.8		
vertical angle sample no. 1	U10º			4.8		4.8		
	U5º	2.3	4.7		6.3		4.7	2.4
	H		5.3	6.4	7.7	5.8	4.8	
	D5º	2.4	4.5		6.1		4.3	2.4
	D10º			4.2		4.4		
vertical angle sample no. 2	U10º			5.6		5.1		
	U5º	2.3	5.8		6.5		4.7	2.4
	H		6.0	7.1	6.1	4.9	4.6	
	D5º	2.2	5.3		5.0		4.2	2.4
	D10º			4.6		4.2		

	sample no. 1	sample no. 2	allowable maximum	required minimum
maximum intensity [cd]	7.8	7.9	8.5	--
minimum intensity in the fields defined in Annex 1 of the Regulation [cd]	0.10	0.10	--	0.05

Results of photometric tests of the stop lamp

Version A: Red outer lens (Installation angle: Type 1)
[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	101.5	130	60
sample no. 2	122.5	130	60

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

distribution of the intensity of the lamps in [cd]								
horizontal angle		L20º	L10º	L5º	V	R5º	R10º	R20º
vertical angle required minimum intensity	U10º			12		12		
	U5º	6	12		42		12	6
	H		21	54	60	54	21	
	D5º	6	12		42		12	6
	D10º			12		12		
vertical angle sample no. 1	U10º			43.7		49.5		
	U5º	17.7	41.7		62.6		55.1	29.9
	H		52.1	61.5	80.2	77.2	56.5	
	D5º	16.1	51.0		82.8		53.6	19.9
	D10º			48.5		56.0		
vertical angle sample no. 2	U10º			50.3		37.1		
	U5º	23.4	51.6		72.3		40.8	22.9
	H		51.5	70.8	117.6	73.3	46.9	
	D5º	19.5	43.7		84.3		47.0	19.2
	D10º			44.1		49.1		

	sample no. 1	sample no. 2	allowable maximum	required minimum
maximum intensity [cd]	90.2	122.6	130	--
minimum intensity in the fields defined in Annex 1 of the Regulation [cd]	1.10	0.50	--	0.3

Results of photometric tests of the stop lamp

Version A: Red outer lens (Installation angle: Type 2)
[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	123.2	130	60
sample no. 2	100.6	130	60

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

distribution of the intensity of the lamps in [cd]								
horizontal angle		L20º	L10º	L5º	V	R5º	R10º	R20º
vertical angle required minimum intensity	U10º			12		12		
	U5º	6	12		42		12	6
	H		21	54	60	54	21	
	D5º	6	12		42		12	6
	D10º			12		12		
vertical angle sample no. 1	U10º			48.9		44.5		
	U5º	13.5	46.8		87.5		45.8	15.5
	H		58.8	73.3	112.2	80.0	49.3	
	D5º	11.5	41.1		65.5		43.9	14.8
	D10º			44.3		39.2		
vertical angle sample no. 2	U10º			56.1		54.6		
	U5º	24.4	53.1		76.1		61.3	23.8
	H		54.7	65.2	81.9	88.6	56.1	
	D5º	24.3	46.3		63.0		48.4	22.5
	D10º			44.9		52.8		

	sample no. 1	sample no. 2	allowable maximum	required minimum
maximum intensity [cd]	118.8	97.8	130	--
minimum intensity in the fields defined in Annex 1 of the Regulation [cd]	0.50	0.40	--	0.3

Results of photometric tests of the stop lamp

Version A: Red outer lens (Installation angle: Type 3)
[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	125.3	130	60
sample no. 2	98.9	130	60

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

distribution of the intensity of the lamps in [cd]								
horizontal angle		L20º	L10º	L5º	V	R5º	R10º	R20º
vertical angle required minimum intensity	U10º			12		12		
	U5º	6	12		42		12	6
	H		21	54	60	54	21	
	D5º	6	12		42		12	6
	D10º			12		12		
vertical angle sample no. 1	U10º			52.0		57.9		
	U5º	27.0	56.2		79.9		59.2	24.8
	H		56.8	62.7	90.8	98.4	62.2	
	D5º	34.7	45.4		75.3		49.5	29.8
	D10º			48.4		53.7		
vertical angle sample no. 2	U10º			64.9		63.7		
	U5º	26.7	57.6		89.7		63.8	20.6
	H		59.9	67.9	75.9	71.8	66.3	
	D5º	29.0	42.8		71.6		54.1	22.6
	D10º			51.2		57.0		

	sample no. 1	sample no. 2	allowable maximum	required minimum
maximum intensity [cd]	100.1	92.4	130	--
minimum intensity in the fields defined in Annex 1 of the Regulation [cd]	1.00	1.10	--	0.3

Results of photometric tests of the stop lamp

Version A: Red outer lens (Installation angle: Type 4)
[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	109.2	130	60
sample no. 2	104.2	130	60

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

distribution of the intensity of the lamps in [cd]								
horizontal angle		L20º	L10º	L5º	V	R5º	R10º	R20º
vertical angle required minimum intensity	U10º			12		12		
	U5º	6	12		42		12	6
	H		21	54	60	54	21	
	D5º	6	12		42		12	6
	D10º			12		12		
vertical angle sample no. 1	U10º			65.7		58.6		
	U5º	25.3	58.0		101.1		58.8	30.9
	H		56.7	76.4	84.8	73.9	67.2	
	D5º	24.4	51.8		62.1		59.9	28.6
	D10º			52.3		54.4		
vertical angle sample no. 2	U10º			68.9		50.2		
	U5º	27.1	65.3		78.1		51.7	33.5
	H		74.5	96.7	80.0	72.7	61.5	
	D5º	26.4	64.3		64.2		55.2	29.2
	D10º			55.3		56.8		

	sample no. 1	sample no. 2	allowable maximum	required minimum
maximum intensity [cd]	101.1	96.7	130	--
minimum intensity in the fields defined in Annex 1 of the Regulation [cd]	1.00	0.90	--	0.3

Results of photometric tests of the stop lamp

Version B: Clear outer lens (Installation angle: Type 1)
[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	108.1	130	60
sample no. 2	128.7	130	60

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

distribution of the intensity of the lamps in [cd]								
horizontal angle		L20º	L10º	L5º	V	R5º	R10º	R20º
vertical angle required minimum intensity	U10º			12		12		
	U5º	6	12		42		12	6
	H		21	54	60	54	21	
	D5º	6	12		42		12	6
	D10º			12		12		
vertical angle sample no. 1	U10º			47.8		52.3		
	U5º	19.9	46.7		66.3		56.8	29.9
	H		56.5	64.2	84.6	80.3	56.9	
	D5º	19.2	51.2		90.9		56.0	23.8
	D10º			52.2		59.4		
vertical angle sample no. 2	U10º			56.2		47.9		
	U5º	21.6	54.6		78.2		45.5	22.3
	H		50.7	77.7	123.4	79.3	47.9	
	D5º	23.5	41.2		93.4		49.3	18.2
	D10º			49.1		49.1		

	sample no. 1	sample no. 2	allowable maximum	required minimum
maximum intensity [cd]	98.5	128.6	130	--
minimum intensity in the fields defined in Annex 1 of the Regulation [cd]	1.00	0.90	--	0.3

Results of photometric tests of the stop lamp

Version B: Clear outer lens (Installation angle: Type 2)
[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	123.4	130	60
sample no. 2	116.2	130	60

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

distribution of the intensity of the lamps in [cd]								
horizontal angle		L20º	L10º	L5º	V	R5º	R10º	R20º
vertical angle required minimum intensity	U10º			12		12		
	U5º	6	12		42		12	6
	H		21	54	60	54	21	
	D5º	6	12		42		12	6
	D10º			12		12		
vertical angle sample no. 1	U10º			50.8		48.8		
	U5º	15.3	38.0		116.3		49.0	18.3
	H		41.1	81.3	112.5	78.6	51.3	
	D5º	11.7	39.6		68.8		48.6	15.0
	D10º			38.7		44.9		
vertical angle sample no. 2	U10º			56.4		54.2		
	U5º	25.1	51.5		81.2		59.1	25.3
	H		53.4	68.2	85.8	92.8	53.6	
	D5º	28.1	54.1		65.3		51.7	21.5
	D10º			51.5		52.5		

	sample no. 1	sample no. 2	allowable maximum	required minimum
maximum intensity [cd]	125.7	102.1	130	--
minimum intensity in the fields defined in Annex 1 of the Regulation [cd]	0.50	1.00	--	0.3

Results of photometric tests of the stop lamp

Version B: Clear outer lens (Installation angle: Type 3)
[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	130.0	130	60
sample no. 2	109.5	130	60

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

distribution of the intensity of the lamps in [cd]								
horizontal angle		L20º	L10º	L5º	V	R5º	R10º	R20º
vertical angle required minimum intensity	U10º			12		12		
	U5º	6	12		42		12	6
	H		21	54	60	54	21	
	D5º	6	12		42		12	6
	D10º			12		12		
vertical angle sample no. 1	U10º			56.5		64.7		
	U5º	27.4	55.8		85.5		63.9	28.6
	H		57.1	69.3	91.6	103.2	67.7	
	D5º	32.1	60.0		77.5		62.9	32.7
	D10º			62.2		61.2		
vertical angle sample no. 2	U10º			68.5		66.6		
	U5º	29.2	61.3		99.3		65.4	24.5
	H		63.5	71.5	79.5	74.4	63.3	
	D5º	28.9	57.2		74.5		47.5	30.8
	D10º			49.2		49.0		

	sample no. 1	sample no. 2	allowable maximum	required minimum
maximum intensity [cd]	105.1	99.3	130	--
minimum intensity in the fields defined in Annex 1 of the Regulation [cd]	1.10	1.30	--	0.3

Results of photometric tests of the stop lamp

Version B: Clear outer lens (Installation angle: Type 4)
[measured after 1 minute burning period when all light sources lit]

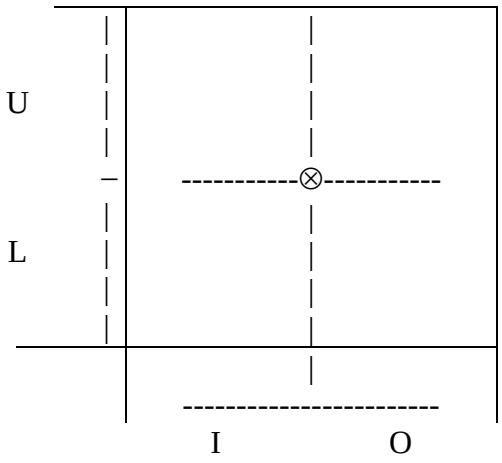
	light intensity of the lamps in reference axis [cd]	allowable maximum	required minimum
sample no. 1	123.3	130	60
sample no. 2	108.6	130	60

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

distribution of the intensity of the lamps in [cd]								
horizontal angle		L20º	L10º	L5º	V	R5º	R10º	R20º
vertical angle required minimum intensity	U10º			12		12		
	U5º	6	12		42		12	6
	H		21	54	60	54	21	
	D5º	6	12		42		12	6
	D10º			12		12		
vertical angle sample no. 1	U10º			63.8		64.4		
	U5º	27.7	58.5		105.3		61.7	32.4
	H		61.2	79.5	89.1	79.3	68.4	
	D5º	24.6	52.8		65.5		62.2	31.3
	D10º			58.7		56.2		
vertical angle sample no. 2	U10º			65.2		66.3		
	U5º	29.6	66.3		78.2		65.8	29.9
	H		73.9	99.9	81.5	75.3	65.5	
	D5º	27.1	65.6		69.4		58.3	28.2
	D10º			60.0		56.1		

	sample no. 1	sample no. 2	allowable maximum	required minimum
maximum intensity [cd]	105.5	99.9	130	--
minimum intensity in the fields defined in Annex 1 of the Regulation [cd]	1.20	1.10	--	0.3

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 (O) [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

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 : Version A and version B

3. Remark concerning tested object(s)

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

4. Appendices

0 List of modifications

1 Information document No. (excluding drawings) : M036-S (1 page)

5. Statement of conformity

The information folder and the type described there comply with the requirements in the above mentioned directive/regulation.

The test laboratory is accredited for the above mentioned tests by the RDW, Vehicle Technology and Information Centre, the Netherlands:

Certification Number: RDW-99050014-02.

The test report comprises - including appendix 0 - the pages 1 to 25 and shall not be reproduced except in full without the written approval of the testing laboratory.

Cologne, February 13, 2006
KFO/BL

B.S.E.E. B. Liu

List of modifications

Appendix 0

Correction of : --

Modification of : - supplement status of the applicable Regulation
- electrical circuit (adding capacitors C1, C2)
- optional bezel

Addition of : --

Deletion of : --

Model Information Document No.: M036-S

Application Type: M036

Extension Application Date: December 20, 2005

Application regulation:	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	8 LEDs

2. Construction and Material

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

3. Marking and Location

Marking		Location	
Trade mark		On the outer lens and on the lamp housing	#
Lamp designation mark	12V 2.3W/0.1W	On the lamp housing	
Approval mark	E4	On the outer lens and on the lamp housing	

4. Drawing no.: 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 #

5. 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.

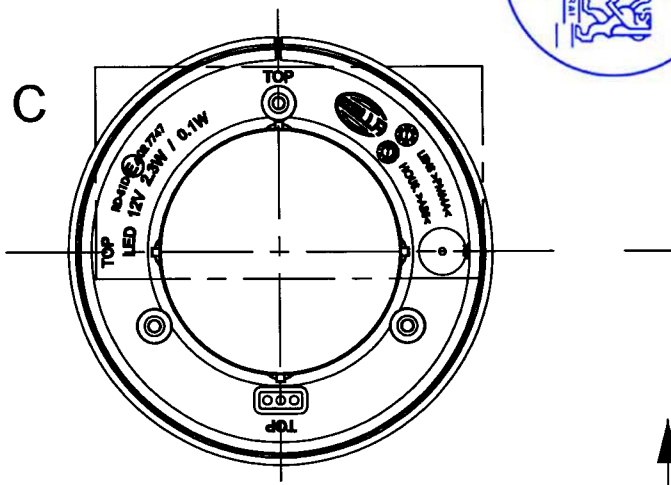
6. Name and address of representative of manufacturer:

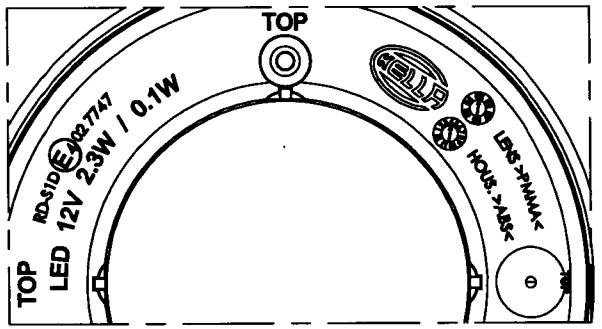
Not applicable

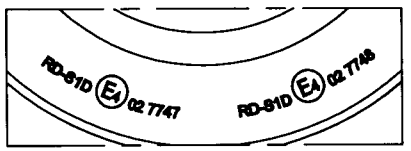
7. Remarks

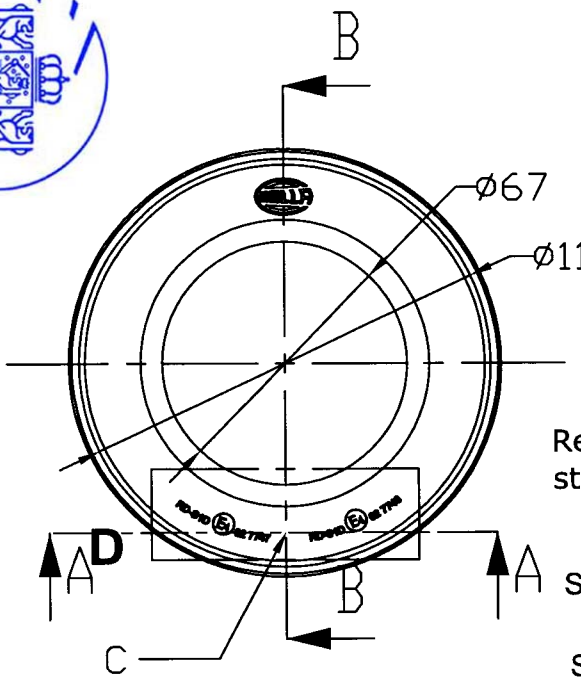
Date: December 20, 2005
Place: Tainan Hsien
Person in charge: Dennis Wang

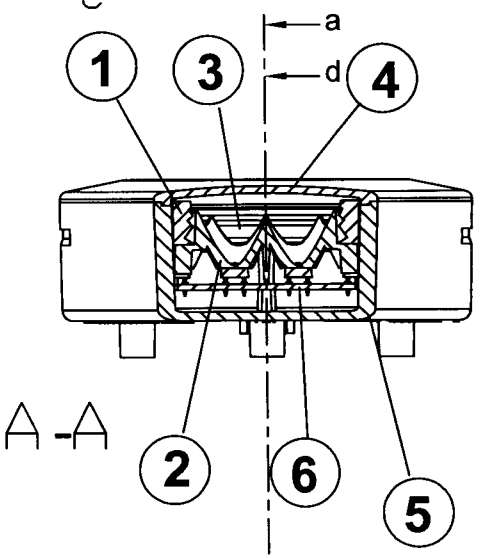
This DRAWING shall be applied for left and right hand.
a-Lougitudinal plane of Vehicle.
b-Horizontal plane of Vehicle.
c-Center of reference.
d-Axis of reference.

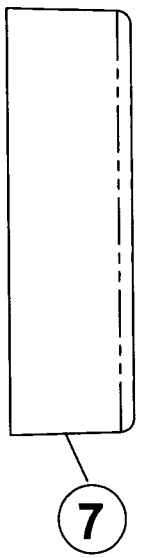


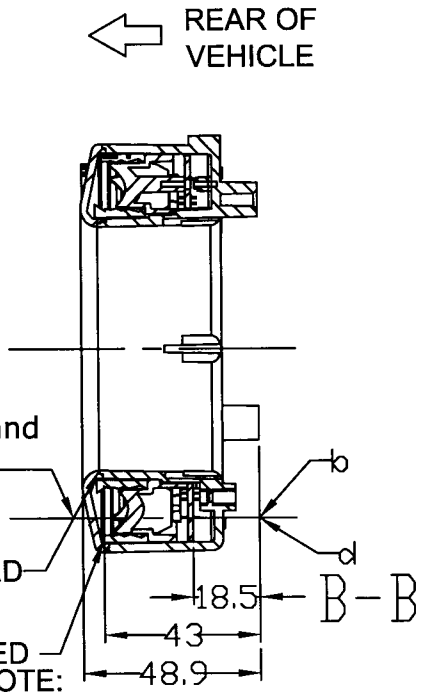












NOTE:
Lens is sonic welded to housing

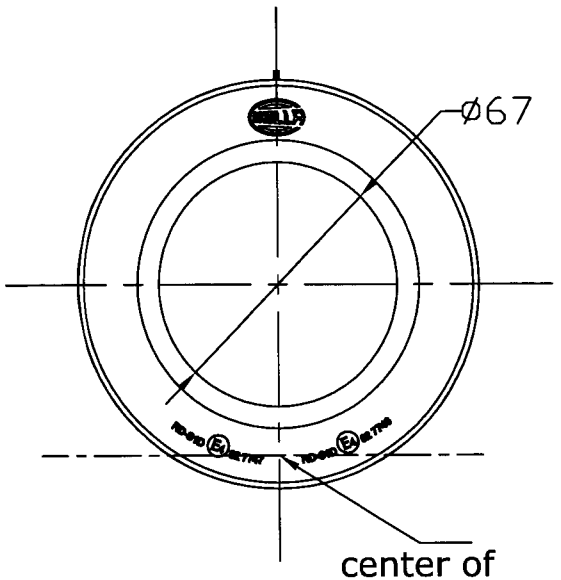
7	**BEZEL(optional) #**
6	**LED BULB**
5	**HOUSING**
4	**LENS**
3	**REFLECTOR 3**
2	**REFLECTOR 2**
1	**REFLECTOR 1**
NO	**CONSTRUCTION**

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 NO M036-S-1

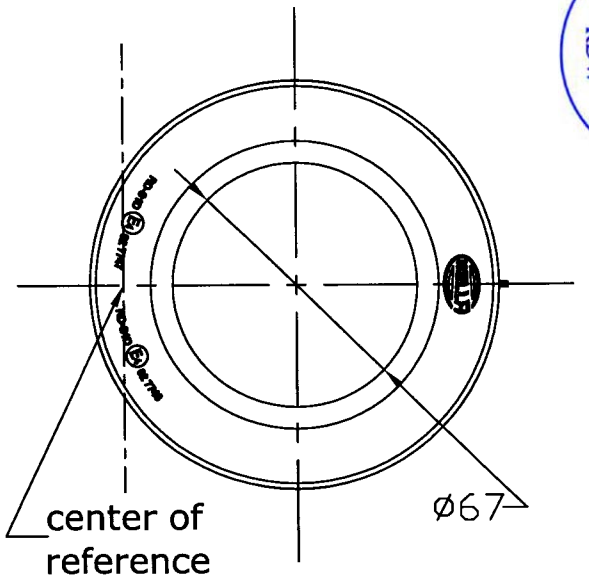
MODEL INFORMATION DOCUMENT NO.M036-S

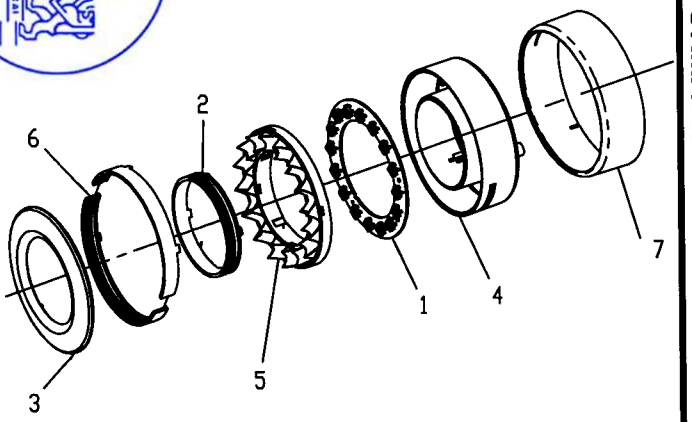
MODEL INFORMATION DOCUMENT NO.M036-S

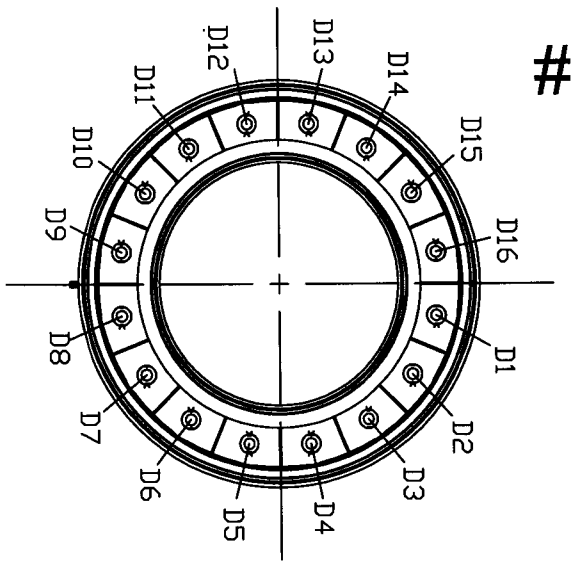
Installation Angle :Type 1

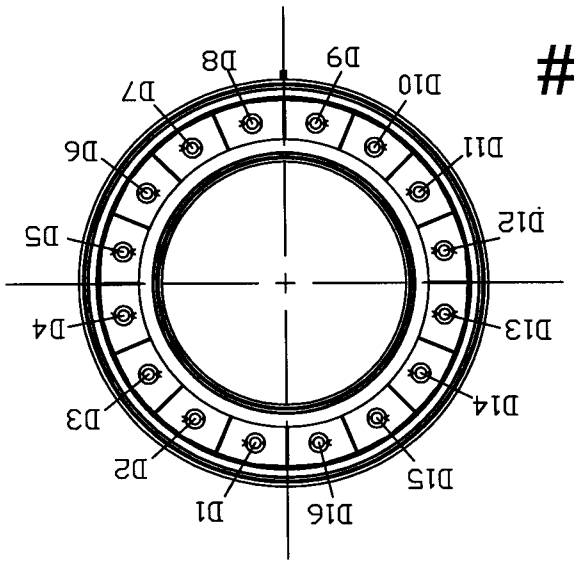


Installation Angle :Type 2









NOTE:
Lens is sonic welded to housing

7	**BEZEL(optional) #**
6	**OUTERRING**
5	**REFLECTOR**
4	**HOUSING**
3	**LENS**
2	**INTERRING**
1	**PCB**
NO	**CONSTRUCTION**

MICROLIGHT		TOL UNLESS SPECIED X=±0.5 X.X=±0.2 X.XX=±0.1
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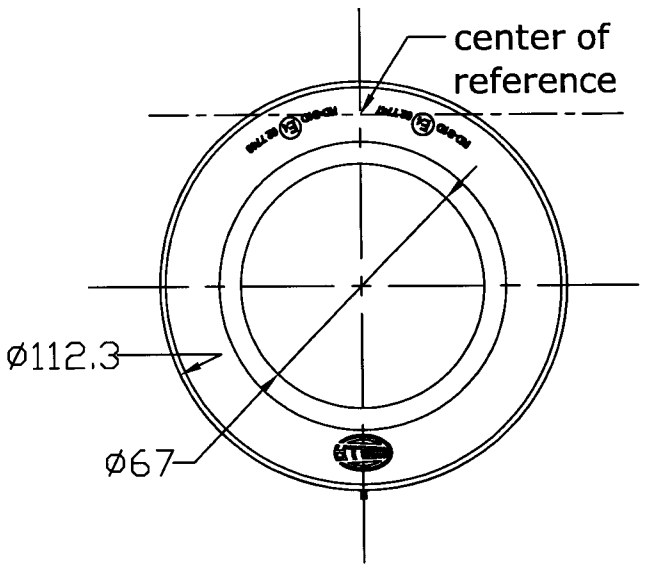
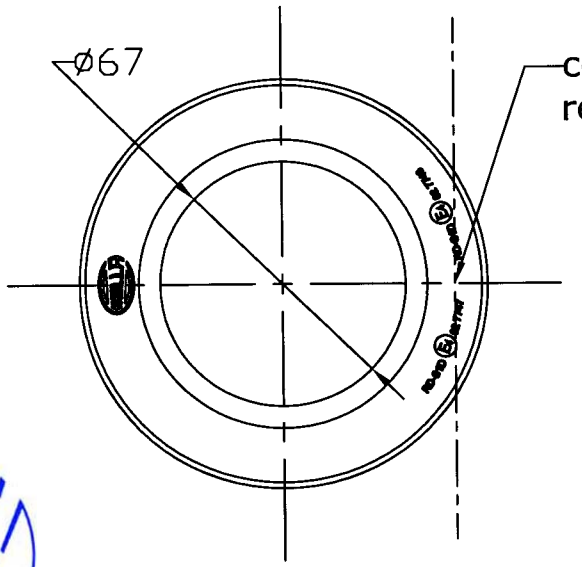
DR		UNIT.MM
APPR		DWG NO M036-S-2

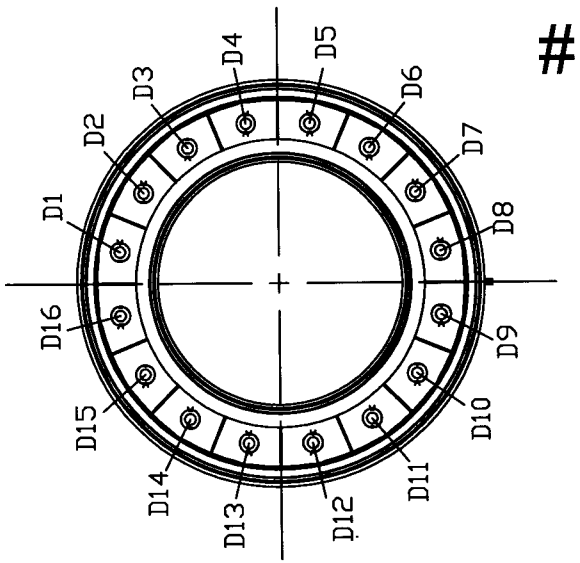
MODEL INFORMATION DOCUMENT NO.M036-S

Installation Angle :Type 3



Installation Angle :Type 4





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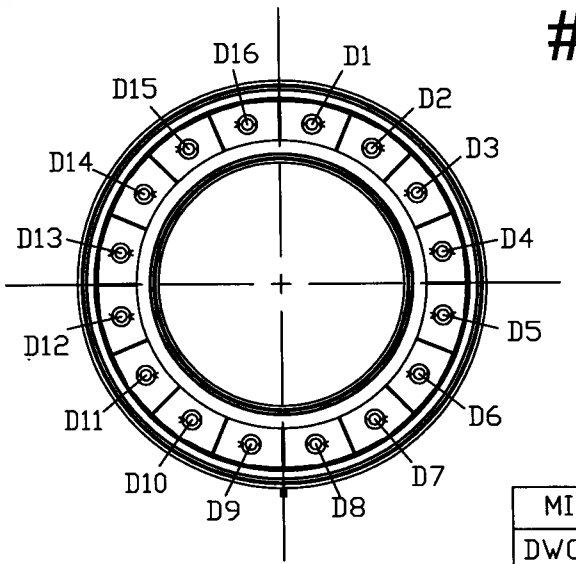

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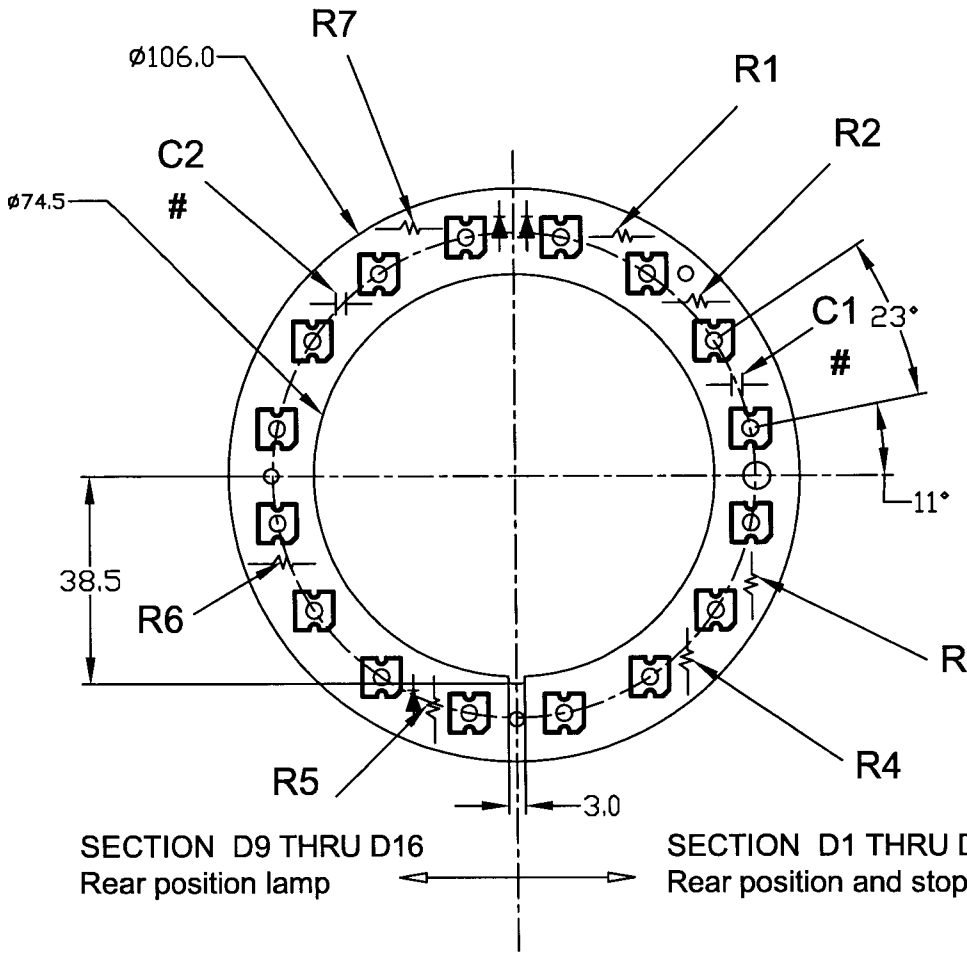
MICROLIGHT		TOL UNLESS SPECIED X=±0.5 X.X=±0.2 X.XX=±0.1
DWG	Dennis	SCALE 1:1
DR		UNIT.MM
APPR		DWG NO M036-S-3

PART NO: M036

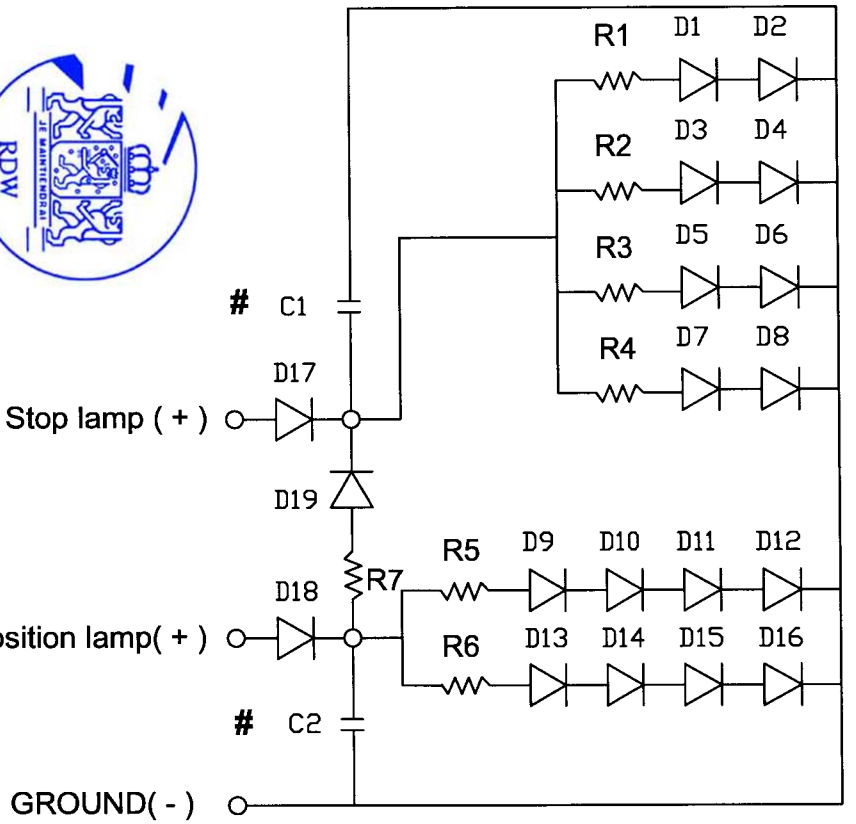
REF	REV	DESCRIPTION	AUTH	DATE

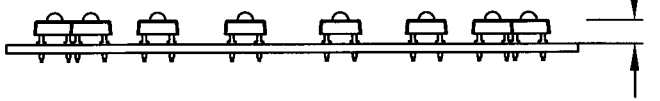
ITEM	PART NUMBER	DESCRIPTION	QTY
D1-D8		LED, 4PIN, 5 LUMEN	8
D9-D16		LED, 4PIN, 2 LUMEN	8
D7-D19	1N4004	DIODE, 3 AMP, 1000V	3
R1-R4		RESISTOR, 1000OHM	4
R5-R7		RESISTOR, 7100OHM	3
J1		WIRE ,RED ,26 GAGE GXL	1
J2		WIRE ,BROWN,26 GAGE GXL	1
J3		WIRE ,BLUE,26 GAGE GXL	1
# C1-C2		CAPACITOR,104NF	2



SECTION D9 THRU D16
Rear position lamp

SECTION D1 THRU D8
Rear position and stop lamp





STANDARD TOLERANCE LIMITS UNLESS OTHER SPECIFIED.		
RANGE	TOLERANCE A	TOLERANCE B
>0~6	±0.08	±0.14
>6~30	±0.1	±0.2
>30~120	±0.2	±0.3
>120~300	±0.3	±0.4
>300~600	±0.4	±0.5
>600~1200	±0.5	±0.6

A3	NAME	DATE
DRN BY	Dennis	94/12/20
DSN BY		
CHK BY		
APPD BY		

MATERIAL: FR4, DOUBLE SIDED
FINISH: NONE

TITLE: LED PCB ASSY,RING MODEL

MICRO LIGHT ENTERPRISE CO.,LTD

UNIT	m/m	SCALE	1/1
SHEET	OF		
DRAW NO.	M036-S-4	Q'TY	

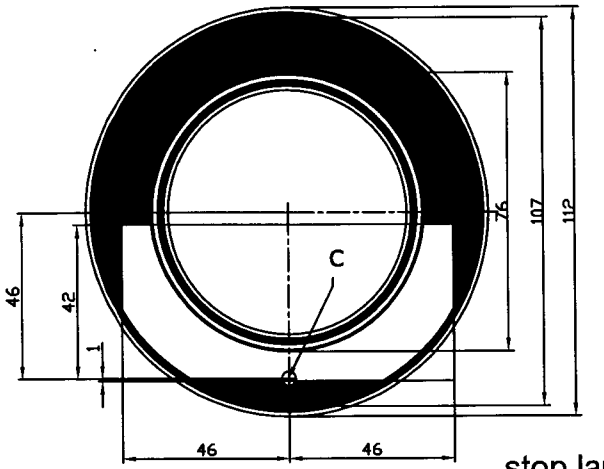
MODEL INFORMATION DOCUMENT NO.M036-S

PART NO: M036-S

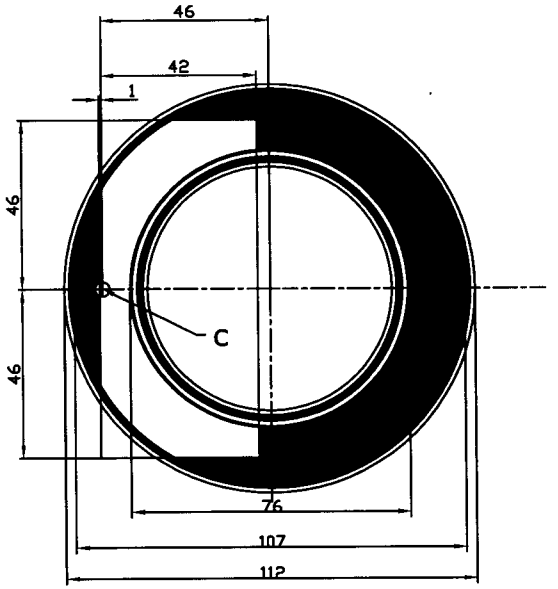
REF	REV	DESCRIPTION	AUTH	DATE

MODEL INFORMATION DOCUMENT NO.M036-S

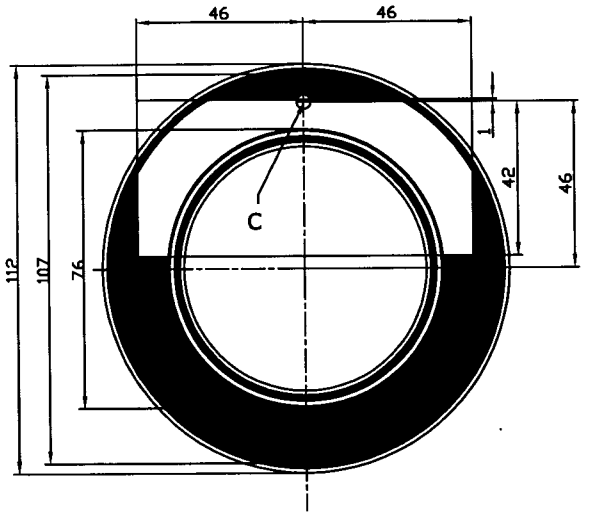
#



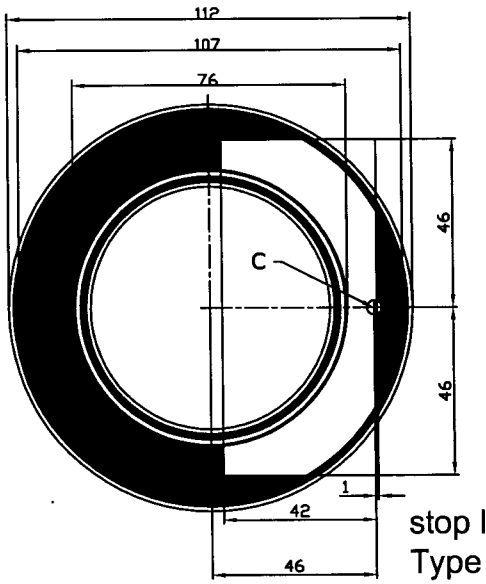
stop lamp
Type 1



stop lamp
Type 2



stop lamp
Type 3



stop lamp
Type 4

c : center of
reference

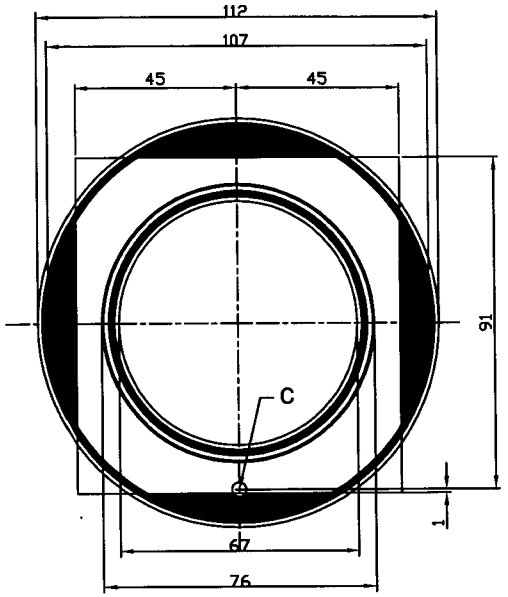
**ILLUMINATING SURFACE
OF STOP LAMP (VERSION A)**

STANDARD TOLERANCE LIMITS UNLESS OTHER SPECIFIED.			A2	NAME	DATE	MATERIAL	MICRO LIGHT AUTO PARTS MFG. CO.,LTD
RANGE	TOLERANCE A	TOLERANCE B	DRN BY	Dennis	94/06/20		UNIT m/m SCALE 1/1
>0~6	±0.08	±0.14	DSN BY			FINISH	SHEET OF
>6~30	±0.1	±0.2	CHK BY				DRAW NO. M036-S-5 Q'TY
>30~120	±0.2	±0.3	APPD BY				
>120~400	±0.4	±0.5	TITLE	LENS AREA(RED COLOR)			
>400~1200	±0.3	±0.4					
>1200~2000	±0.5	±0.6					

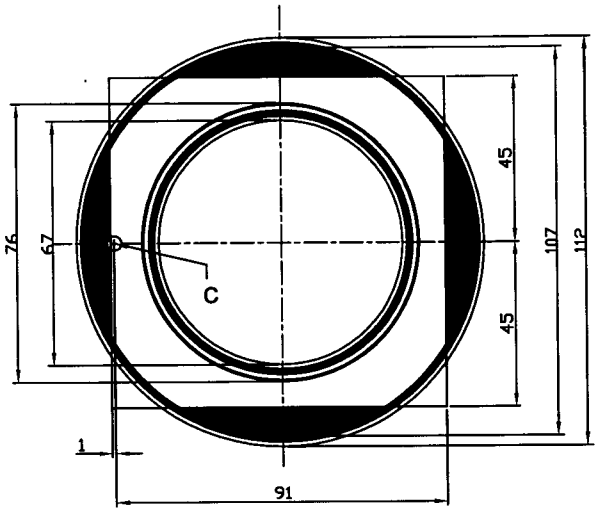
PART NO: M036-S

REF	REV	DESCRIPTION	AUTH	DATE

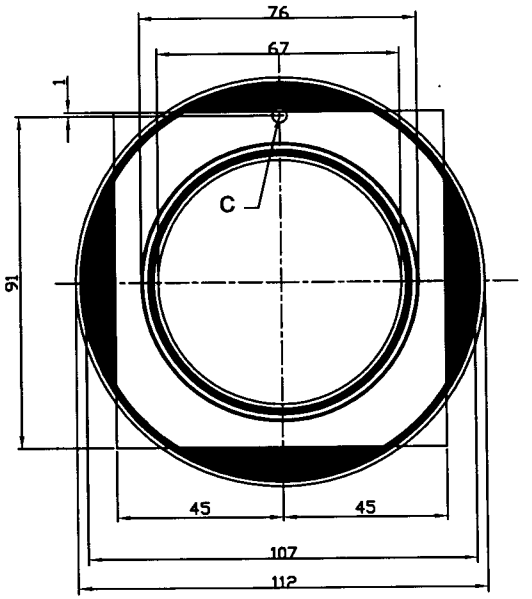
#



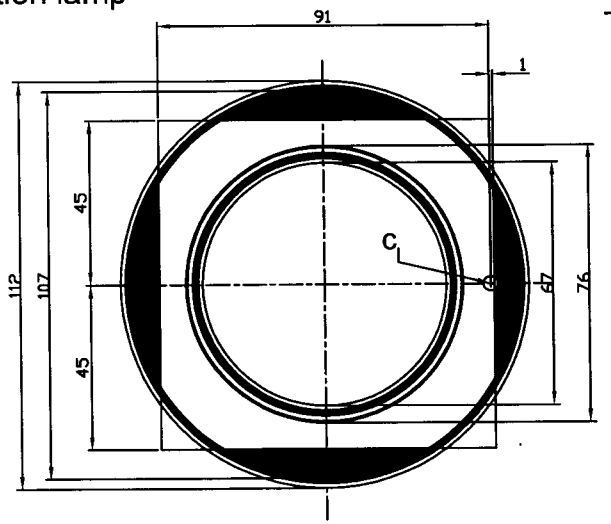
rear position lamp
Type 1



rear position lamp
Type 2



rear position lamp
Type 3



rear position lamp
Type 4

c : center of reference

ILLUMINATING SURFACE OF REAR POSITION LAMP (VERSION A)

MODEL INFORMATION DOCUMENT NO.M036-S

STANDARD TOLERANCE LIMITS UNLESS OTHER SPECIFIED.		
RANGE	TOLERANCE	
	A	B
>0~6	±0.08	±0.14
>6~30	±0.1	±0.2
>30~120	±0.2	±0.3
>300~500	±0.4	±0.5
>120~300	±0.3	±0.4
>500~1200	±0.5	±0.6

(A2)	NAME	DATE	MATERIAL
DRN BY	Dennis	94/06/20	
DSN BY			FINISH
CHK BY			
APPD BY			
TITLE	LENS AREA(RED COLOR)		

MICRO LIGHT
AUTO PARTS MFG. CO.,LTD

UNIT	m/m	SCALE	1 / 1
SHEET		OF	
DRAW NO.	M036-S-6		Q'TY

PART NO: M036-S

REF	REV	DESCRIPTION	AUTH	DATE

MODEL INFORMATION DOCUMENT NO.M036-S

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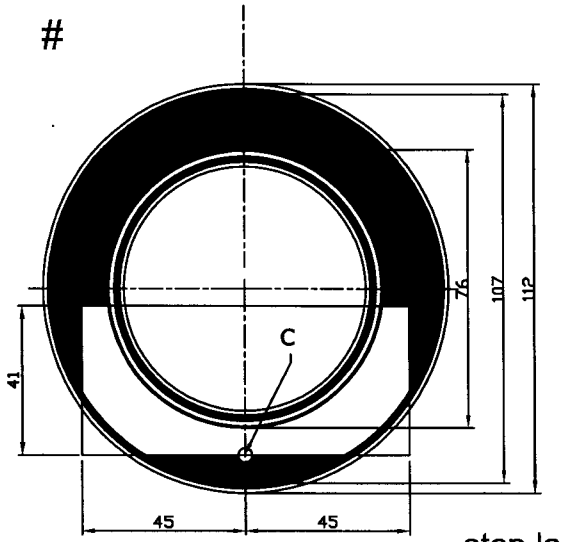
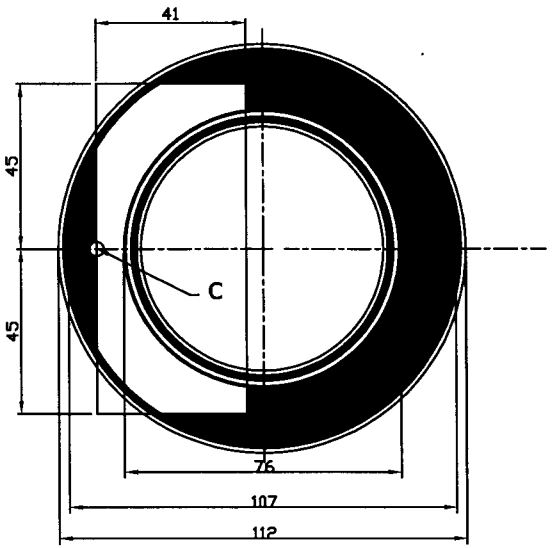
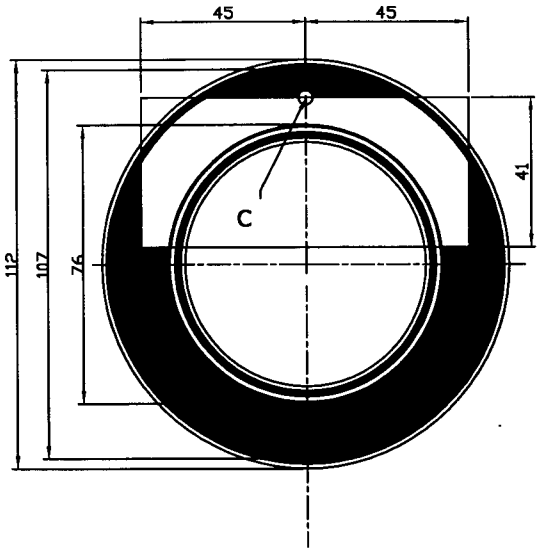


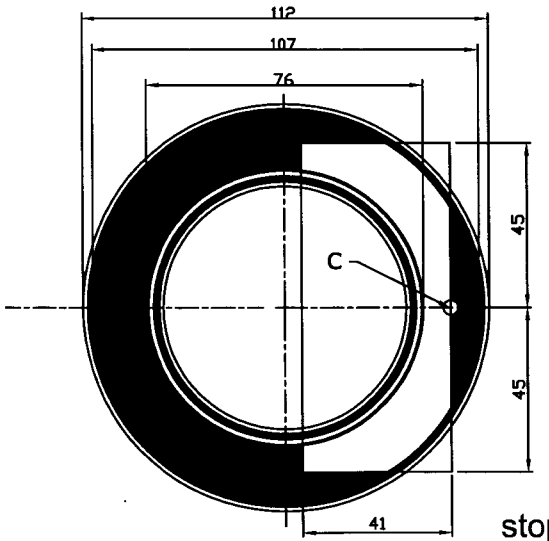
stop lamp
Type 1



stop lamp
Type 2



stop lamp
Type 3



stop lamp
Type 4

c : center of
reference

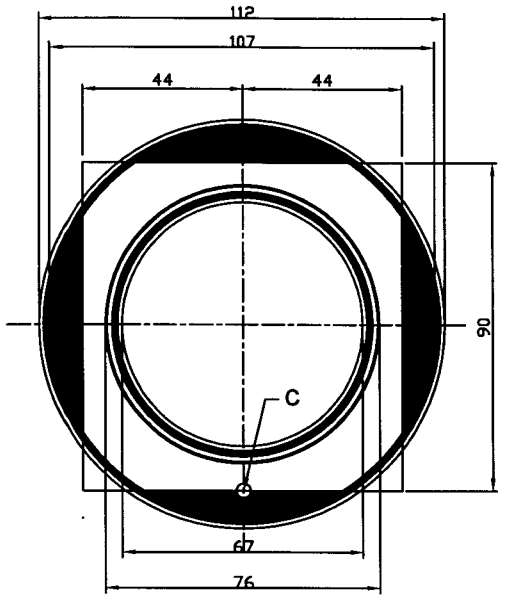
ILLUMINATING SURFACE
OF STOP LAMP (VERSION B)

STANDARD TOLERANCE LIMITS UNLESS OTHER SPECIFIED			A2	NAME	DATE	MATERIAL	MICRO LIGHT AUTO PARTS MFG. CO.,LTD
RANGE	TOLERANCE A	TOLERANCE X / B	DRN BY	Dennis	94/06/20		
>0~6	±0.08	±0.14	DSN BY			FINISH	UNIT m/m SCALE 1 / 1
>6~30	±0.1	±0.2	CHK BY				SHEET OF
>30~120	±0.2	±0.3	APPD BY				DRAV NO. M036-S-7 Q'TY
>120~400	±0.4	±0.5	TITLE	LENS AREA(CLEAR COLOR)			
>400~1000	±0.3	±0.4					
>1000~1200	±0.5	±0.6					

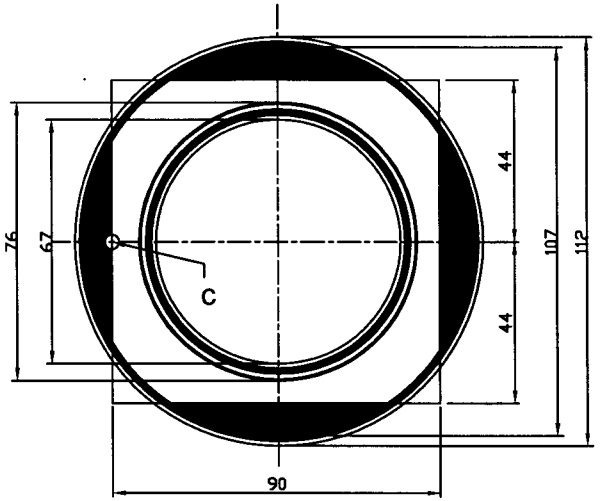
PART NO: M036-S

REF	REV	DESCRIPTION	AUTH	DATE

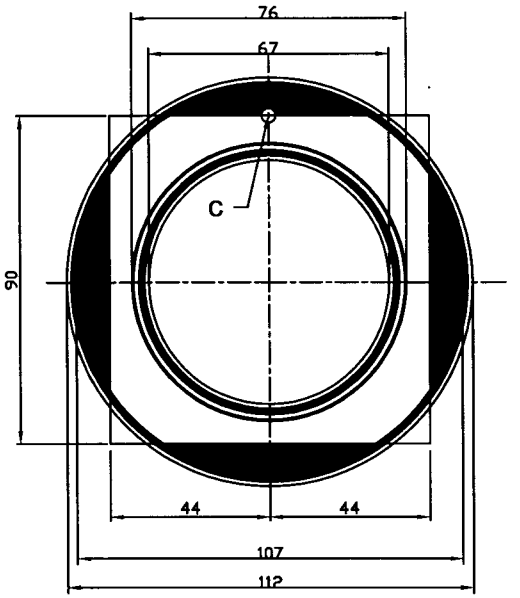
#



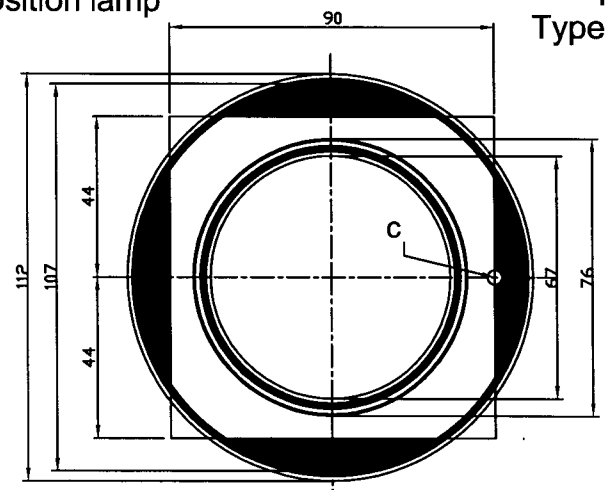
rear position lamp
Type 1



rear position lamp
Type 2



rear position lamp
Type 3



rear position lamp
Type 4

c : center of reference

ILLUMINATING SURFACE OF REAR POSITION LAMP (VERSION B)

MODEL INFORMATION DOCUMENT NO.M036-S

STANDARD TOLERANCE LIMITS UNLESS OTHER SPECIFIED		
RANGE	TOLERANCE A	TOLERANCE X B
>0~6	±0.08	±0.14
>6~30	±0.1	±0.2
>30~120	±0.2	±0.3
>300~500	±0.4	±0.5
>120~300	±0.3	±0.4
>500~1200	±0.5	±0.6

(A2)	NAME	DATE
DRN BY	Dennis	94/06/20
DSN BY		
CHK BY		
APPD BY		

MATERIAL

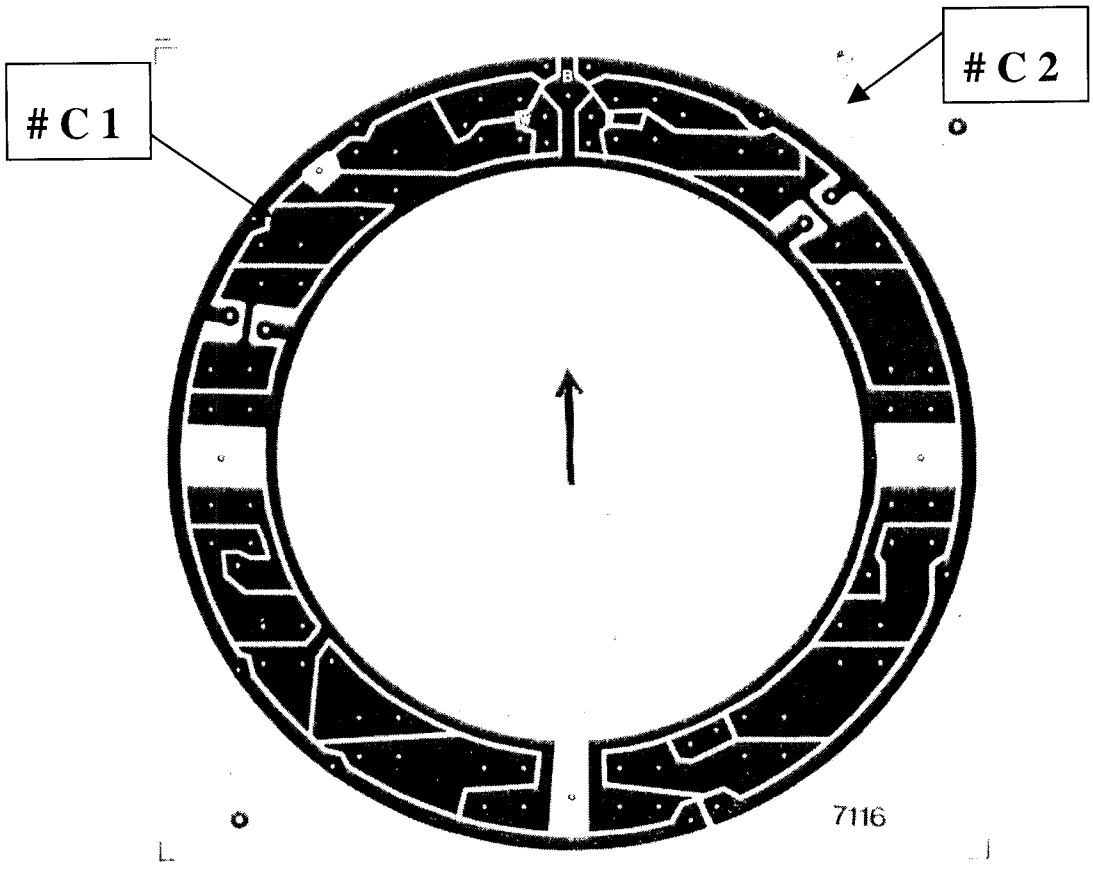
FINISH

TITLE LENS AREA(CLEAR COLOR)

MICRO LIGHT
AUTO PARTS MFG. CO.,LTD

UNIT	m/m	SCALE	1 / 1
SHEET		OF	
DRAW NO.	M036-S-8		Q'TY

MODEL INFORMATION DOCUMENT NO.MO36-S



MICROLIGHT

M036-S(12V)-LAYOUT

Drawing NO. M036-S-9

JE MAINTIENDRAI
RDW