

THE NETHERLANDS
(N E D E R L A N D)**COMMUNICATION**Concerning ⁽¹⁾:

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- ~~approval withdrawn~~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

of a type of rear-view mirror pursuant to Regulation number 81.

Approval number: E4-81R-0014654**Extension number: 01**

1. Trade name or mark of the equipment : FU
2. Equipment type : FD-321
3. Brief description including in particular the following information:
 - 3.1. Main dimensions (of the reflecting surface) : 156 mm x 96.5 mm
 - 3.2. Nominal radius of curvature (of the reflecting surface) : 1350±150 mm
4. Manufacturer's name and address : FU HWA MIRROR CO., LTD.
688 Sec. 7, Chang Lu Rd., Lu Kang, Chang Hua,
Taiwan
5. If applicable, name and address of manufacturer's representative : N/A
6. Equipment submitted for approval on : 2015-02-03
7. Technical service responsible for conducting approval tests : TÜV SÜD Auto Service GmbH
Westendstraße 199
D-80686 München
8. Date of report issued by that service : 2015-02-11



9. Number of report issued by that service : 14-00449-CX-SHA-01
10. Vehicles for which the equipment is designed : L Category
11. Approval is : ~~granted/refused/extended/withdrawn~~⁽¹⁾
12. Reason(s) for extension of approval : Modify material of stay
13. Place : Zoetermeer
14. Date : 01-APR-2015
15. Signature : 
Uwe Löbig
16. A list of documents contained in the approval file transmitted to the administrative service which has granted approval is annexed to this communication.

⁽¹⁾ Strike out what does not apply.

Technical Report No.: 14-00449-CX-SHA-01
Manufacturer: FU HWA MIRROR CO., LTD.
Type: FD-321

Page: 1/4

TECHNICAL REPORT

No.: 14-00449-CX-SHA-01

Test according to the ECE regulations concerning the approval of:

Uniform provisions concerning the approval of rear view mirrors and of two-wheeled power-driven vehicles with or without sidecar, with regard to the installation of rear view mirrors on handlebars

No. 81
series of amendment 00, suppl. 02

dated: 01.03.1989
dated: 18.07.2007

Approval Status		
☐	Granting of a type approval	
☒	Extension/correction to type approval no.	E4-81R-0014654-00
	Reason for extension	The material of stay modified from ASA to PP

Technical Report No.: 14-00449-CX-SHA-01
Manufacturer: FU HWA MIRROR CO., LTD.
Type: FD-321

Page: 2/4

I. Technical Description

I.I. Rear view mirror

- | | | |
|--------|---|---|
| 0.1. | Make (trade name of the manufacturer): | FU |
| 0.2. | Type: | FD-321 |
| 0.3. | Brief description including in particular the following information | |
| 0.3.1. | Main dimensions: | Reflecting surface: 156 mm×96.5 mm |
| 0.3.2. | Nominal radius of curvature of the reflecting surface: | 1350±150 mm |
| 0.4. | Name and address of the manufacturer: | FU HWA MIRROR CO., LTD.
688 Sec. 7, Chang Lu Rd., Lu Kang, Chang Hua, Taiwan |
| 0.5. | If applicable, name and address of manufacturer's representative: | N/A |
| 0.6. | Equipment submitted for approval on: | 2015-02-03 |
| 0.7. | Technical service responsible for conducting approval tests: | TÜV SÜD Auto Service GmbH
Westendstraße 199
D-80686 München |
| 0.8. | Date of test report of the technical service: | 2015-02-11 |
| 0.9. | Number of the test report of the technical service: | 14-00449-CX-SHA-01 |
| 0.10. | Vehicles for which the equipment is designed: | L Category |

Technical Report No.: 14-00449-CX-SHA-01
Manufacturer: FU HWA MIRROR CO., LTD.
Type: FD-321

Page: 3/4

II. Test Record

II.I. **Rear view mirror**

1. Test condition: Due to the reason for extension stated according to Annex I, only impact tests are requirements.
- 1.1. Technical data of the test samples: Class L Main exterior rear view mirror.
- 1.2. Test equipment: The used test equipments comply with the basic requirements.
2. Test results: The results of the impact tests were determined in accordance with the assembly position in the information document.
- 2.1. General specification: The general specification complies with the basic requirements.

Rear-view mirror is adjustable.

Outline of reflecting surface: $r \geq 2.5 \text{ mm}$

Points of contact with a sphere of 100 mm diameter: $r \geq 2.5 \text{ mm}$

Diameter or diagonal $< 12 \text{ mm}$: rounded edges
- 2.2. Dimensions: N/A
- 2.3. Reflecting surface and coefficient of reflection: N/A
- 2.4. Impact test and bending test: The Impact test and bending test complies with the test requirements.

Attachment III.I. 1.3.
3. Place of test: FU HWA MIRROR Co., Ltd., CHANG-HUA , TAIWAN
- Date of test: 2015-02-05

Technical Report No.: 14-00449-CX-SHA-01
Manufacturer: FU HWA MIRROR CO., LTD.
Type: FD-321

Page: 4/4

III. Attachments

III.I. **Rear-view mirror**

- 1.1. Test record of dimensions-N/A
- 1.2. Test record of reflecting surface and coefficient of reflection-N/A
- 1.3. Test record of impact test and bending test-Only impact tests are requirements.

III.II **Reason of extension**

III.III. **Information Document**

Information document of the manufacturer No.: FD-321-01 dated on 2015-02-02

IV. Statement of conformity

The information folder as mentioned under No. III. and the type described therein are in compliance with the test specification mentioned above. The worst-case was selected in accordance with document "Preparation of Test Reports".

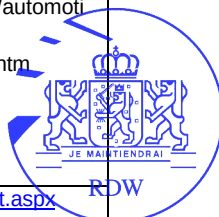
The test report may be reproduced and published in full and by the client only. It can be reproduced partially with the written permission of the test laboratory only.



München, 2015-02-11

Joe Zhou
Test Laboratory / DIN EN ISO 17025

Genehmigungsbehörde/ Approval authority	Land/Country	Registriernummer/ Registration-number	Aktueller Benennungsumfang/ Actual scope list
Kraftfahrt-Bundesamt (KBA)	Deutschland/ Germany	KBA-P 00100-10	www.kba.de
Vehicle Certification Agency (VCA)	Vereintes Königreich/ United Kingdom	VCA-TS-006	http://ec.europa.eu/enterprise/sectors/automotive/approval-authorities-technical-services/technical-services/index_en.htm
Approval Authority of the Netherlands (RDW)	Niederlande/ The Netherlands	RDW-99050009 01	
National Standards Authority of Ireland (NSAI)	Irland/ Ireland	Technical Service Number: 49	
Vehicle Safety Certification Center (VSCC)	Taiwan/ Taiwan	DE04-06-02	http://www.vsc.org.tw/English/Default.aspx



Technical Report No.: 14-00449-CX-SHA-01
Manufacturer: FU HWA MIRROR CO., LTD.
Type: FD-321

Attachment III.I.
Page: 1/1

Attachment III.I.

1.1. Test record of dimensions-N/A

1.2. Test record of reflecting surface and coefficient of reflection-N/A

1.3. Test record of impact test and bending test

Clause	Requirement + Test	Result - Remark
8.2.2.6.1.	Impact point on reflective surface	
	Angle for raising pendulum and the vertical ($\geq 20^\circ$)	48°
	Reflection surface does not break or fragments of glass still adhere to the housing or doesn't exceed 2.5 mm either side of the crack.	No breakage
8.2.2.6.2.	Impact point on housing surface	
	Angle for raising pendulum and the vertical ($\geq 20^\circ$)	54°
	Reflection surface does not break or fragments of glass still adhere to the housing or doesn't exceed 2.5 mm either side of the crack.	No breakage
8.3.	Bending test on the holder fixed to the stem	
	The mirror does not break or fragments of glass still adhere to the housing or doesn't exceed 2.5 mm either side of the crack.	N/A



Technical Report No.:	14-00449-CX-SHA-01
Manufacturer:	FU HWA MIRROR CO., LTD.
Type:	FD-321

Attachment III.II
Page: 1/1

Attachment III.II.

Reason of extension

Added: N/A

Modified:

- The material of stay modified from ASA to PP, details see manufacturer's information document Annex 3.

Deleted: N/A



FU	FU HWA MIRROR CO., LTD.	Type: FD-321 Information document No. FD-321-01
		Date: 2015-02-02
		Pages: Page 1 of 9

APPLICATION FOR EXTENSION APPROVAL PURSUANT
TO ECE REGULATION NO.81 RELATING TO THE APPROVAL OF
DEVICES FOR INDIRECT VISION AND OF MOTOR VEHICLES WITH
REGARD TO THE INSTALLATION OF THESE DEVICES FOR THE
REAR-VIEW MIRROR OF FU HWA MIRROR CO., LTD.

TYPE: FD-321

Total pages: 9

Signature of a responsible person:

Place: Chang-Hua, Taiwan

Date: 2015-02-02



FU	FU HWA MIRROR CO., LTD.	Type: FD-321 Information document No. FD-321-01
		Date: 2015-02-02
		Pages: Page 2 of 9

Confirmation

We declare hereby that the products submitted for this extension approval test has been manufactured and assembled on conditions of ordinary mass production and that they are compatible with enclosed documentation.



FU	FU HWA MIRROR CO., LTD.	Type: FD-321 Information document No. FD-321-01
		Date: 2015-02-02
		Pages: Page 3 of 9

Reason of extension

Added: N/A

Modified:

- The material of stay modified from ASA to PP , details see Annex 3.

Deleted: N/A



FU	FU HWA MIRROR CO., LTD.	Type: FD-321 Information document No. FD-321-01
		Date: 2015-02-02
		Pages: Page 4 of 9

1. Make (trade name of manufacturer): FU
2. Type and general commercial description(s): FD-321
3. Means of identification of the type, if indicated on the device: By letters and digits
4. Category of the vehicle for which the device intended: L Category
5. Name and address of manufacturer: FU HWA MIRROR CO., LTD.

688 Sec. 7, Chang Lu Rd., Lu Kang,
Chang Hua, Taiwan
6. Location and method of affixing of the approval mark: See drawing: 8D321N00000
7. Address(es) of assembly plant(s): FU HWA MIRROR CO., LTD.

135, FAN CHIN RD., YUNG PING
TSUM, PU YEN, CHANG-HUA ,
TAIWAN
8. Mirrors (state for each mirror)
 - 8.1. Variant: N/A
 - 8.2. Drawing(s) for the identification of the mirror: See drawing: 8D321N00000
 - 8.3. Details of the method of attachment: See drawing: 8D321N00000
 9. Devices for indirect vision other than mirrors: N/A
 - 9.1. Type and characteristics (such as a complete description of the device): N/A
 - 9.1.1. In the case of camera-monitor device, the detection distance (mm), contrast, luminance range, glare correction, display performance (black and white /color) image repetition frequency, luminance reach of the monitor: N/A



FU	FU HWA MIRROR CO., LTD.	Type: FD-321 Information document No. FD-321-01
		Date: 2015-02-02
		Pages: Page 5 of 9

- 9.2. Sufficiently detailed drawings to identify the complete device including installation instructions; the position for the type FD-321 approval mark has to be indicated on the drawings: N/A

E. **ENCLOSURES**

- | | | |
|------|---|------------|
| E.1. | Annex 1: Description of mirror type FD-321 | 2015-02-02 |
| E.2. | Annex 2: Statement concerning resistance to corrosion and aging | 2015-02-02 |
| E.3. | Annex 3: Key parts list | 2015-02-02 |
| E.4. | FD-321-01: Rear-view Mirror Assembly | 2015-02-02 |



FU	FU HWA MIRROR CO., LTD.	Type: FD-321 Information document No. FD-321-01
		Date: 2015-02-02
		Pages: Page 6 of 9

Annex 1: Description of mirror type FD-321

Technical description:

Class L rear view mirror:

The rear view mirror FD-321 consists of plastic housing, glass and fixing bracket. The mirror glass is spherically convex type with nominal radius of curvature $SR1350 \pm 150$ mm. The main dimension of the reflecting surface is 156 mm×96.5 mm, the effective reflective area is 113.5 cm² and the coefficient of reflection is higher than 40%.

Mounting instruction:

Use 1 Bolt; mount on the steering handle of the vehicle. The mirror can be adjusted manually.

FU	FU HWA MIRROR CO., LTD.	Type: FD-321 Information document No. FD-321-01
		Date: 2015-02-02
		Pages: Page 7 of 9

Annex 2: Statement concerning resistance to corrosion and aging

We hereby declare that the product of FU HWA MIRROR CO., LTD., type FD-321 class L rear view mirror will retain the characteristics specified in ECE Regulation No. 81, in spite of prolonged exposure to adverse weather conditions, in normal conditions of use.



FU	FU HWA MIRROR CO., LTD.	Type: FD-321 Information document No. FD-321-01
		Date: 2015-02-02
		Pages: Page 8 of 9

Annex 3: Key parts list

NO	Name of part	Quantity	Material
1	MIRROR	1	GLASS
2	HOUSING	1	ASA
*3	STAY	1	PP

*modify material of stay from ASA to PP



