

Driver State Monitor

# RVS-330 Vuemate Driver Fatigue System



*Another Sense for Safety*

USER MANUAL

.

# TABLE OF CONTENTS

---

## 01 | Getting Started

1. Prior to Using This Product	4
2. Guidelines and Cautions Prior to Use	5
3. Cautions for The Use	6
4. Specifications and Major Functions	8
5. Components	9
6. Names and Functions of Each Part	10

---

## 02 | How To Use

1. Cautions for Installation	11
2. Installation	12
3. How to Operate	15

---

## 03 | Other Information

1. Product Specifications	16
2. Product Warranty	17
3. Indemnity Policy for Customer Damages	19
4. Customer Support Center	20
5. Troubleshooting Guides	21

---

## Prior to Using This Product <sup>1</sup>

---

**Vuemate is a registered trademark of Dinalog, Inc.**

**All information of this User Manual is protected by copyright law.**

- Other products and services used in this User Manual are trademarks or registered marks of their respective ones.
- Be informed that it is prohibited to copy, modify, or distribute of the embedded program on this product without written consent of Dinalog, Inc. Any violation may be penalized in accordance with the relevant regulations.
- This User Manual is produced as of the present and there would be an editing error or omitting.
- The images used on this User Manual look different from the actual product and color as per the printing conditions.
- These product and User Manual may change or be modified without any prior notice for improvements.
- Make sure to read through this User Manual so as to drive safely and to use this product as intended.

## Guidelines and Cautions Prior to Use <sup>2</sup>

---

**This product is a safe driving assistant device to monitor the drowsy driving and negligence in keeping eyes forward, and thus alert the drivers to those dangers, so as to reduce the car accidents occurred by their drowsiness and distractedness.**

- It is effective for long-hour or highway driving to use this product.
- Please make sure to install and use in a correct and safe way according to this User Manual.
- This product may present different recognition rates depending on surroundings, conditions in the vehicles, and driver's habits.
- Dinalog, Inc. is not responsible for any troubles or accidents caused by improper installation, usage, and remodeling.
- Do not move or operate this product while driving for safety.

## Cautions for The Use<sup>3</sup>



### Warning for serious accidents or damages/ injuries due to violation of instructions!

- **Do not put this product in any heating devices (stove or microwave oven, etc.) to dry when it is wet.**  
It can cause deformation or malfunction, for which free services are not available.
- **Do not use chemical detergents (benzene, thinner, or alcohol, etc.) to clean this product.**  
It can cause a fire, for which free services are not available.
- **Do not disassemble or apply physical impact.**  
It can cause a damage or malfunction, for which free services are not available.
- **Do not install or operate this product while driving.**  
It can cause an accident. Stop or park your car in a safe place to install or operate this product.

## Cautions for The Use<sup>3</sup>



### Caution for potential minor injuries and product damages due to violation of instructions!

- **Do not connect this product to the vehicle power supply (battery).**  
It can cause a discharge of the vehicle battery.
- **Do not connect this product to other electronic devices like a car navigator or a dash cam, etc.**  
It can cause malfunction.
- **Make sure to apply the double-sided adhesive tape firmly when mounting the cradle.**  
Prolonged use or vibration of the vehicle can change the position of this product. In that case, it can deteriorate the performance of this product.
- **Avoid parking under the direct sunlight.**  
If this product inside the vehicle stays long under the direct sunlight, it can cause malfunction or failure.
- **Disconnect the cigarette power cable from the in-car socket when turning off the engine.**  
It can cause a discharge of the vehicle battery.
- **Be cautious of electrostatic force (especially, in winter or a dry condition).**  
It can cause malfunction or failure.

## Product Overview and Major Functions <sup>4</sup>

### Product overview

- High-performance ARM CPU
- CMOS image sensor
- USB 2.0/UART interface
- Protection circuitry for over-voltage/current, inverse voltage, and minimizing ripple noises
- Face and pupil detection and tracing algorithm
- CE/FCC/KC fully approved and RoHS compliance

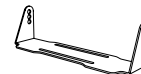
### Major functions

- Detection & warning of drowsiness and negligence in keeping eyes forward while driving
- Infrared LEDs available at night and in tunnels
- Removal of irregular reflection by sunlight using special filters
- Detection/distinction of glasses and sunglasses
- 3-color operation status LED (in green/blue/red)
- Adoption of an alert micro-loudspeaker
- Works with both 12V and 24V fitting to any auto vehicles
- Easy mounting using a dedicated cradle
- Mute and 3-step volume control
- Adjustment of 3-step sensitivity
- Mute mode for the state of 'Negligence in looking ahead' using the motion recognition function
- Support of various USB accessories
- Connected with an external GSP

## Components <sup>5</sup>



Main body



Cradle



Fixing screws



Double-sided adhesive tapes for the cradle



User Manual



Cigarette power cable



Cable clips



External GPS

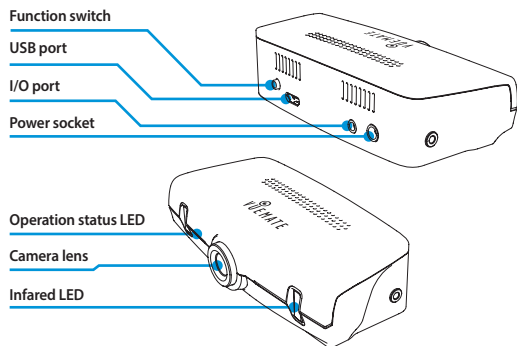


Buried power cable

(Separately sold)

※ The components of this product are subject to change without prior notice for the improvement of their performance.

## Names and Functions of Each Part <sup>6</sup>



- **Power socket** : for connection to the cigarette power cable (DC 12/24V)
- **Camera lens** : for monitoring of the driver's driving condition in real time
- **Operation status LED** : for display of such statuses as the driver's drowsiness, negligence in keeping eyes forward, and movement of the face beyond the detectable range (in green/blue/red)
- **USB Port** : for connection of various USB accessories (including LED warning light/vibrator, etc.) and for update of firmware
- **Infrared LED** : for detecting the driver's face at the dark nights and the tunnels with the LED lights
- **I/O Port** : for interface with an external GPS and other external devices
- **Function switch** : for control of the volume and the sensitivity
  - A short press is for control of the volume (Mute/1~4 step)
  - A long press is for control of the sensitivity (High: Level 3; Middle: Level 2; Low: Level 1)

※ Blocking the camera with hand at a distance of approx. 20cm for 3 seconds sets off sounds and disables/enables the warning sound for "Negligence in looking ahead."

## Cautions for Installation <sup>1</sup>

- Make sure to install this product in a place with flat ground after turning off your engine.
- Make sure to check all components inside the gift box and to read through this User Manual so as to install this product in a correct way.
- Be careful not to block your driving sights when installing this product.
- Install this product at a safe and light place.
- Install this product at a place where your face can be well viewed by the camera.
- Make sure to remove the protection film from the camera lens before installation.
- Keep this product away from any place where the airbags are equipped.
- Fix the cigarette power cable not to be visible, which can make your car clean and safe.

## Installation <sup>2</sup>

### I Recommended mounting positions

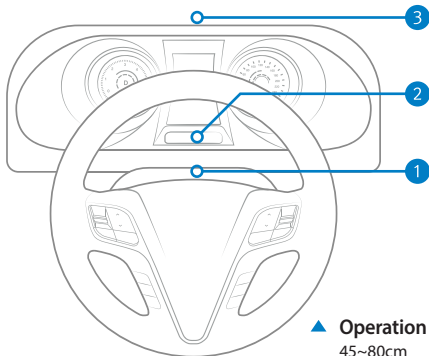
- Refer to the picture shown below and select a convenient location depending on the type of vehicle.
- Install the product at a location which is a little below the level of the driver's eyes looking ahead.
- Adjust the product on a level with the eyes of the driver.

#### ● Recommended location

- 1 Above the steering column cover(Recommended)
- 2 At the front bottom of the instrument panel
- 3 Above the dashboard

#### ● Recommended distance

±60cm



## Installation <sup>2</sup>

### I How to install

- First, assemble the cradle to the main body of the product using the fixing screws (adjustable to 3 steps depending on its mounting location).
- Remove foreign materials from your selected location.
- Attach double-sided tape to the bottom of the cradle and fix it at an installation location.
- Adjust the position so that the camera lens can face the driver's eyes.
- Tighten the screws to the cradle when the position is adjusted.
- Now, you finish installing the product.

### I Cautions for installation

- ※ Improper installation may reduce the recognition rate.
- ※ Be sure to install the product properly; reverse installation does not function properly.
- ※ Make sure that the product is properly installed so that it does not get in the way while turning the wheel.
- ※ When there is a curved area, bend the shape of the cradle so it can maintain a maximum contact surface.

# How to Operate <sup>3</sup>

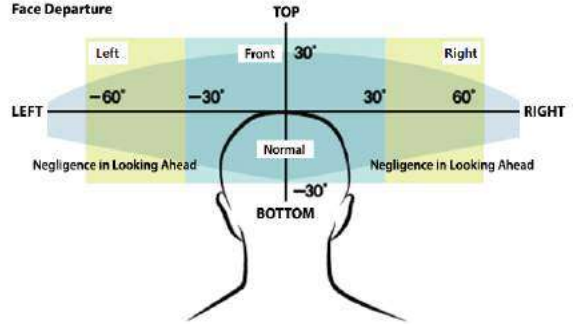
## Operational sequence and summary

● : Lit on    ⚡ : Flickering

Activity	Summary	Operation Status LED	Warning Alarms
1. Power On/Booting	When power is turned on, the system boots and is initialized in about 5 seconds.	OFF → ●●●● ⚡	T-R-R-Ring
2. Identification of the pupils position	When the pupils are situated in the center of the camera, the LED light flickers green. If the pupils maintain their position for about 1 second, the checking will be confirmed (the light continues to flicker when the camera is unable to pinpoint the eye).	⚡ → ●	Ding-Dong
3. 1st alarm for drowsiness detection	The warning goes off when the driver closes his eyes for a preset sensitivity time (about 1 second) distracted into all directions (left and right and, up and down) of each 30 degree away from the state of looking straight ahead.	● → ●	Beeep~
4. 2nd alarm for drowsiness detection	The warning goes off when the drowsiness continues for 1 second even after the first warning until the driver opens his eyes.	● → ●	Bee-O~ Bee-O~ Bee-O~ Bee-O~
5. Alarm for negligence in looking ahead	The warning goes off when the driver's eye strays 30~60 degrees toward either side from the state of looking ahead for longer than about 3 seconds.	● → ●	Ding-Ding~
6. Face departure	The warning goes off when the driver's face deviates 60 degrees toward either side from the state of looking ahead (or when the camera does not detect his eyes).	● → ⚡	
7. Power OFF	When the power cable is unplugged or the ignition is turned off.	OFF	

# How to Operate <sup>3</sup>

## Face detectable ranges



## Precautions for operations

- ※ Some of specially coated sunglasses or glasses can reduce the recognition rate.
- ※ When hair blots out the eye, the product can make mistakes or experience reduced recognition.
- ※ The recognition rate may be reduced before and after sunrise/sunset or affected by sideway light or external light.
- ※ The warning may go off when the camera checks the driver's eyes and judges them closed. (For examples; when the driver lowers his head or looks down or opens his eyes slightly, or when he laughs aloud making his eyes narrow.)



## Product Specifications <sup>1</sup>

---

- **Physical dimensions** : 92 X 24 X 46 mm
- **Net weight** : 80g (including the cradle)
- **Color** : Black
- **Camera** : CMOS image sensor
- **Audio** : Micro-loudspeaker (Min. 90dB)
- **Input voltage** : DC 12/24V
- **Power consumption** : Max 2.5W
- **Operation temperature** : -20 ~ +70°C

※ For better performance, the exterior designs or the specifications of this product may change without any prior notice.

## Product Warranty <sup>2</sup>

---

- The warranty term of this product is within 1 year from the purchase date.
- The warranty term of the accessories and the consumable parts is separately applied.
- The support will be provided upon request according to product warranty.
- The purchasing date is essential for the free warranty support.
- For detailed warranty support, please refer to "Indemnity Policy for Customer Damages".
- Products, being subject to replacement under the warranty policy, may be replaced with new products or ones that have similar specifications.
- Dinalog, Inc. is not responsible for any repair, exchange or refund until the faulty product is returned.
- The product warranty and the serial number will not be reissue.
- The product warranty will be provided only for the product manufactured by Dinalog, Inc.

## Product Warranty <sup>2</sup>

Product Warranty		
Product Name	Driver State Monitor	
Model Name	RVS-330	
Approval No.		
Serial No.		
Warranty Period	1 year from the purchased date	
Customer	Name	Contacts
	Address	
Purchased Where	Name	Contacts
	Address	

※ Please keep this product warranty safely along with the User Manual.

## Indemnity Policy for Customer Damages <sup>3</sup>

	Classification by Customer Damages		Warranty within the Term	Warranty out of the Term
	For performance/functional problems under normal use conditions	For serious repair required within 10 days of purchase		Exchange
For serious repair required within 1 month of purchase		Exchange		
For serious repair required within 1 month of exchange		Exchange		
When not exchangeable		Refund	Paid repair/ Paid product exchange	
Repair if available		For defect		Free repair
		Repeated problem with the same defect (from 4 times)		Exchange
Repeated problem with different parts (from 5 times)		Paid product exchange		
Repair if unavailable			For the loss of a product while in A/S	Exchange
			When repair is unavailable due to lack of spare parts within the component holding period	
		When repair is unavailable even with spare parts		
1) Malfunction due to customer fault > Malfunction & damage caused by user's negligence (fall, shock, damage, unreasonable operation, etc.), careless use, intention, or mistake. > Malfunction & damage caused by repairs or modifications by the user or a third party. > Malfunction & damage due to the use of unauthorized components, consumables, or separately sold parts.			Paid repair	Paid repair
2) Other cases > Malfunction due to natural disasters (fire, flood, earthquake, etc.) > Expired life span of a consumable part > Malfunction due to external reasons				

※ This warranty is only valid in the country where you purchased this product.

## Customer Support Center <sup>4</sup>

### I Thank you for purchasing this product.

- **Inquiry for the product and after-sales services**

- For any problem or inconvenience on your product, please contact the customer service center in your country where you purchased the product as follow.

- **Customer support center**

### I Please make a reservation in advance for visit.

- **Business hours**

10am ~ 5pm Mon to Fri (Sat, Sun, and holidays are closed)

- **Application to after-sales services**

Hand-carry by visit and parcel delivery service.

Please make sure to provide the serial number, the purchase place and date of the product for services.

If you use the parcel delivery service, please make sure to have the product packaged sufficiently enough to resist exposure to impacts or damages, and provide such information as your name, contact number, address, and detailed description of problems, etc. for quick response to your request.

## Troubleshooting Guides <sup>5</sup>

Symptoms	Troubleshooting
Power is not turned on?	Check if the cigarette power cable is properly connected to the power socket on the product or if the cable is damaged. If no problem is found with the cable, contact the customer support center.
The operation status LED doesn't come on or change colors?	Contact the customer support center unless the operation status LED turns on after power is applied.  When the LED continues to flicker green while the power is on, that means that the camera still does not pinpoint the eye, when you need to adjust its position. Contact the customer support center if there is no change thereafter.  Check again if the product is correctly installed when the operation status LED does not function properly. Contact the customer support center if the same symptom occurs repeatedly.
The speaker does not give off warnings?	First check whether the product is correctly installed, and then contact the customer support center.
Infrared LEDs do not function?	After you turn on power to the camera, you can check its state by directing your mobile phone toward the infrared LED. Contact the customer support center if they do not function.

-MEMO-