

How to Prevent “UV Dose Lower” Alarm from Being Issued

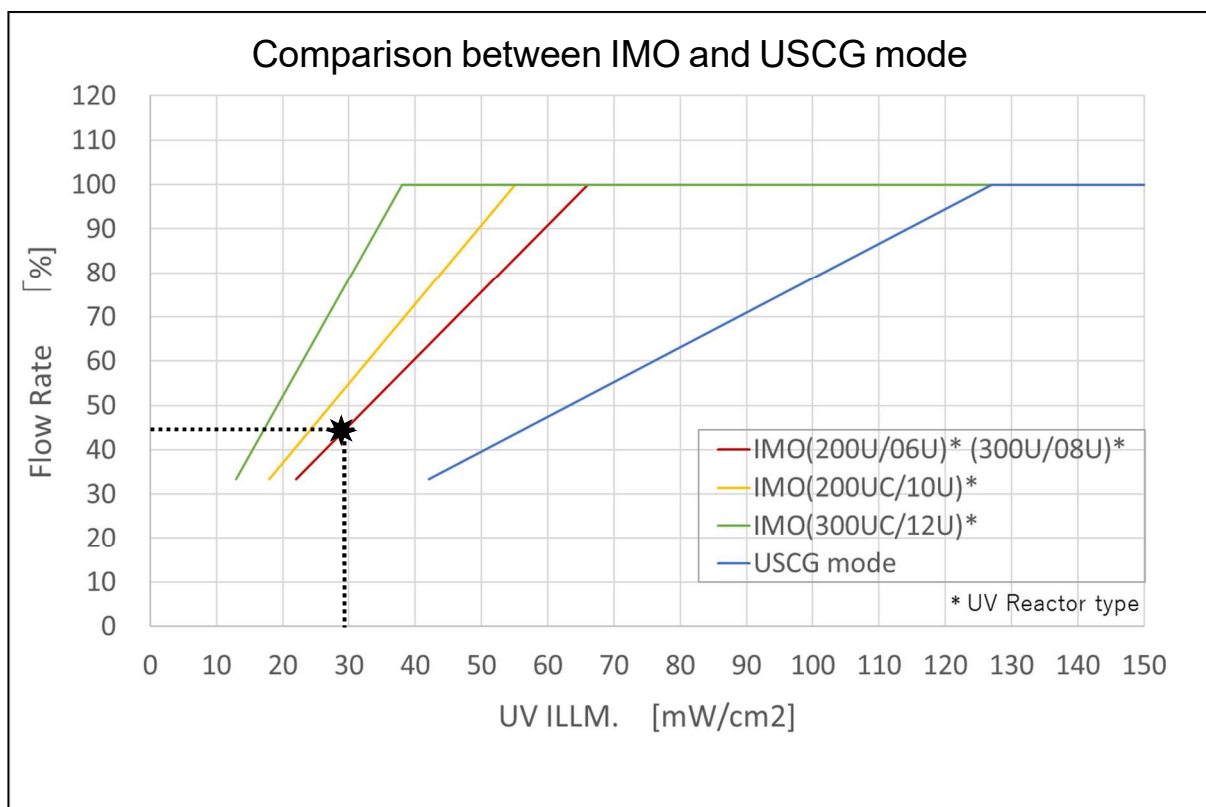
To prevent “UV Dose Lower” alarm from being issued in our ballast water management system, we would like to provide you with some useful information.

“UV Dose Lower” alarm is issued when UV dose is less than the required amount for the water to be treated. If “UV Dose Lower” alarm is issued in the operation, UV lamp output stops, and cooling operation starts while keeping water flow system.

Following table is a summary of the main alarm causes and the countermeasures.

*The section titles of the operation manual containing the relevant information are enclosed in square.

No.	Trouble	Cause	Countermeasure
1	UV power source output drop	<ul style="list-style-type: none"> • UV power output value is not reached 4000 W. 	<ul style="list-style-type: none"> • Contact MIURA engineer.
2	UV sensor failure	<ul style="list-style-type: none"> • Measurement error of the sensor • The sensor expiration date is exceeded. (Valid for five years) 	<ul style="list-style-type: none"> • Calibration check of the UV sensor “3.2 UV sensor” in Chapter 5 • Replacement of the UV sensor “1.4 Cleaning and replacement of the UV sensor glass” in Chapter 5
3	Dirt on the UV sensor glass or the failure	<ul style="list-style-type: none"> • Water leakage into the sensor • Use of non-genuine glass 	<ul style="list-style-type: none"> • Cleaning or replacement of the UV sensor glass “1.4 Cleaning and replacement of the UV sensor glass” in Chapter 5 • Replacement of the UV sensor glass packing “1.5 Replacement of the UV sensor glass and glass packing” in Chapter 5 • Use of genuine glass
4	Dirt on the UV lamp protective tube surface and the insufficient cleaning	<ul style="list-style-type: none"> • Insufficient cleaning “5. Fresh water cleaning of the UV reactor” in Chapter 4 	<ul style="list-style-type: none"> • Cleaning of the UV lamp protective tube surface “1.3 Replacement and cleaning of the UV lamp and UV protective tube” in Chapter 5
5	Low UV transmittance of water to be treated	<ul style="list-style-type: none"> • The water is out of the system’s effective range. (See the graph on the next page for details.) 	<ul style="list-style-type: none"> • Follow the BWMP (ballast water management plan).



How to read the graph (Example: IMO (300U/08U) *Red line in the graph)

When the UV ILLM. (UV illuminance) is 30 mW/cm², the Flow Rate should be adjusted to approximately 45% to prevent the "UV Dose Lower" alarm from being issued.

Inspect the items below regularly to prevent any troubles.

1. Cleaning of UV sensor and UV sensor glass: Every six months

"1.4 Cleaning and replacement of the UV sensor glass" in Chapter 5

2. Cleaning of UV reactor inside using MIURA specified cleaning agent: Every six months
3. Calibration of UV sensor: Every year

"3.2 UV sensor" in Chapter 5

4. Replacement of UV reactor's parts: At entering any dockyards
5. Replacement of UV sensor: Every five years

*Regardless of the above, if you have concerns about the water quality in the port where the ballasting is performed, conduct these inspections in advance.

If you have any questions, please contact the nearest MIURA office.