

1. System description

This document presents the Marioff *Hi-fog*[®] system, as designed for accommodation, service areas and extended local/total protection system in Machinery spaces.

The Marioff *Hi-fog*[®] fire extinguishing system uses water under high pressure, and is based on established hydraulic principles and technology. The specially designed spray nozzles cause the water to enter the space as fine fog (mist) at high speed. The small droplets yield a very large total water surface area, providing efficient cooling of the fire and surrounding gases. The high speed of the small droplets enables the fog to penetrate hot flue gases and reach the combustion source, even in large, hidden fires.

The **Carnival Liberty NB 6111** is equipped with Marioff *Hi-fog*[®] sprinkler system. All accommodation and public areas, stores, lobbies, galleys and workshops are covered with automatic sprinkler system according to SOLAS II-2/12 and IMO Resolution A.800.

The category A machinery spaces fire risk areas are protected with Hi-Fog water based Hi-fog system capacity upgrade according to IMO MSC/Circ. 1165 and local applications system according to IMO MSC/Circ. 913 requirements.

The **Carnival Liberty NB 6111** Hi-Fog system is equipped with SPU 23+1, (3x SPU6 and 1x SPU5+1) which are dimensioned to maintain the full water pressure and flow for the total flooding of the most demanding fire section, AFT Total flooding including machinery sections (M1+M2+M3+M9+M10+M15+M16+M20).

The Hi-fog[®] system is designed to start automatically when water flows out of the system. The water flow is controlled by a "flow monitor", located in pump unit. In case of a failure in the flow monitor or in the stand by pump, Pump unit will also start from low system pressure.

The system consists of the following main components:

- Pump unit SPU 23+1, (3x SPU6 and 1x SPU5+1)
- Accumulator units 2 x (NAU 12 + WAU 12) + 2 x (NAU 10 + WAU 10)
- Control & indication panel in the wheelhouse an electric control and monitoring system.
- Control indication panel in the ECR for machinery section valves and pump units.
- Hi-Fog PLC cabinet for control the section valve alarms to the mimic panel and giving the needed signals for VDR system.
- Stainless steel piping.