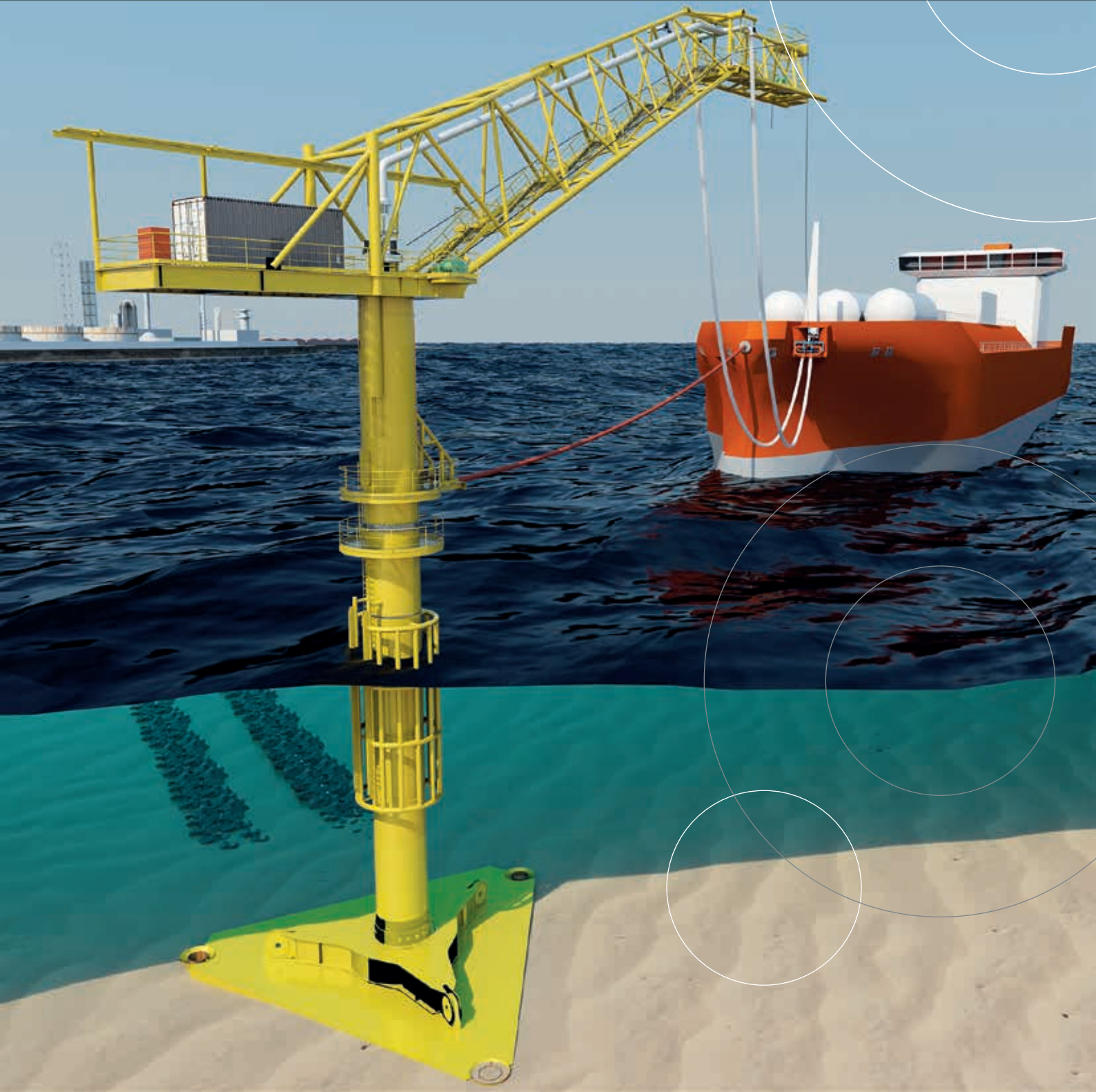


bluewater

Cryogenic Loading Tower



Cryogenic Loading Tower (CLT)

The Cryogenic Loading Tower (CLT) enables single point mooring and (off-) loading any size LNG Carrier of 20,000 up to 266,000 m³, without the need for a jetty and breakwaters.

The Cryogenic Loading Tower is based on the successful Advanced Loading Tower (ALT) concept which has a proven track record in export of large quantities of crude oil for more than 14 years and has achieved more than 2,000 loading operations.

The tower is unmanned and handling of the mooring hawser and aerial cryogenic hoses is fully remote-controlled. A special highly insulated submarine pipeline transport the LNG from/to the shore. A vapour return line can be included. Offloading rates are between 1,000 to 10,000 m³/h depending on the number and size of the flexible cryogenic hoses.

The CLT outfitting and performance can be adapted to meet specific client requirements.

CLT Characteristics

- Near shore LNG (off-)loading terminal
- Suitable for LNG Carriers up to 266,000 m³
- Based on field proven Single Point Mooring & LNG technology
- Fully remote-controlled and monitored
- Year round availability
- Accredited by Oil Majors



Specifications

Cryogenic Loading Tower

Cryogenic Loading Tower

LNG Carrier	20,000 up to 266,000 m ³ (larger on request) with bow manifold
Distance tower – LNGC	55 – 75 m
Height above water	About 60 m
Mooring load	250 – 450 mT
Tower yaw/rotation	Unrestricted
Hose & hawser handling	Included and remote-controlled
Boat loading	Included

Product transfer

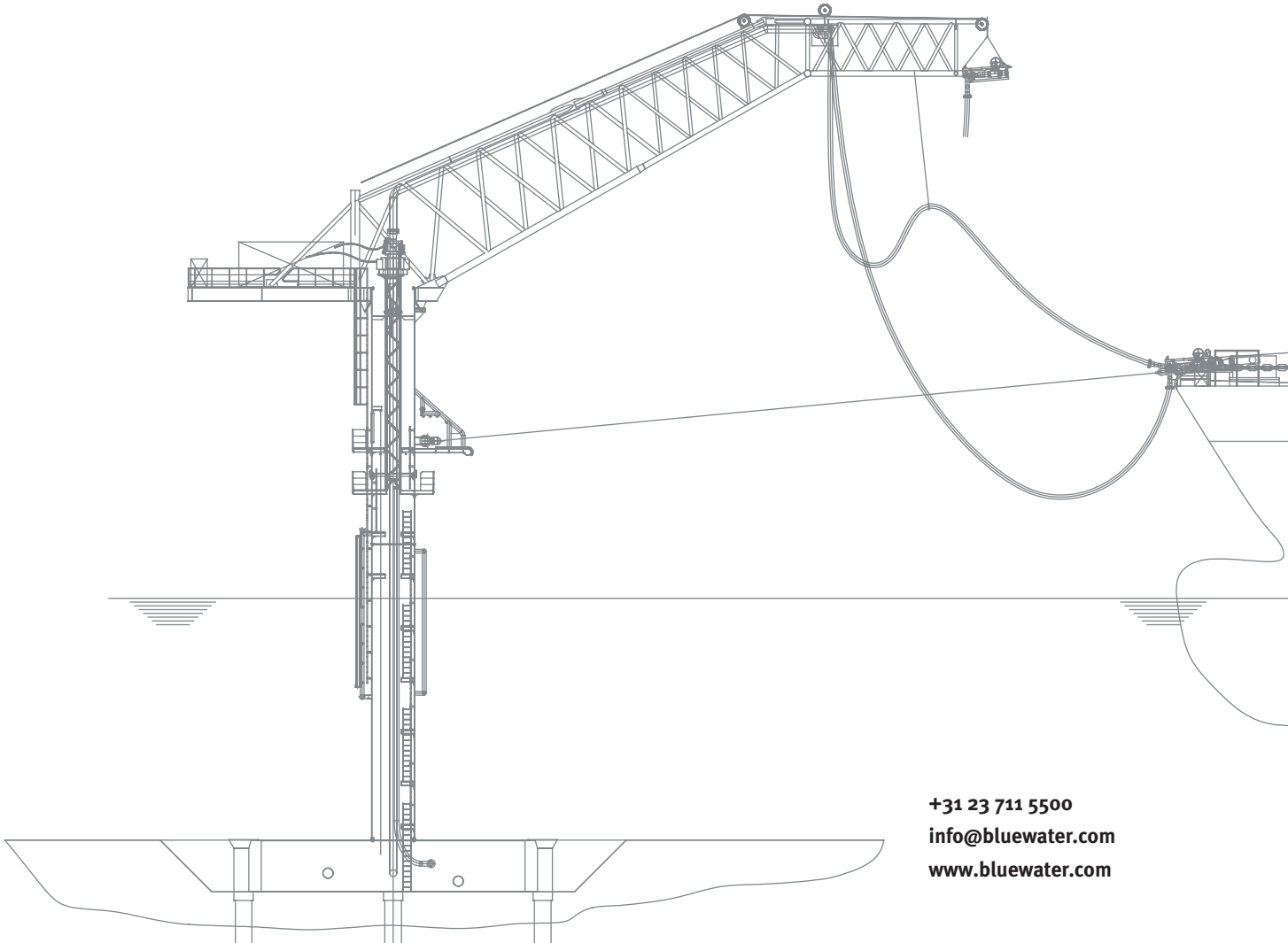
(Off-)loading rate	1,000 upto 10,000 m ³ /h (on request higher)
Temperature range	minus 162°C to ambient
Piping	Loop 150/300 lbs ANSI, vapour return (on request)
Swivel	Single or multipath Bluewater design
Subsea pipeline	Suitable for highly or vacuum insulated pipe-in-pipe (VIPIP)

Environment

Water depth range	10 – 65 m
Ambient Temperature	– 50°C to +55°C

Operations

Offloading window	Year round, up to 3 - 4 meter Hs
Control system	Automated valves and process monitoring, including tanker load and condition monitoring
Remote control	Hose & hawser handling, rotation of head



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