TECHNICAL SPECIFICATIONS

Logging Units

TS DATA SHEETS

- LU -

Continuing development sometimes necessitates specification changes without notice

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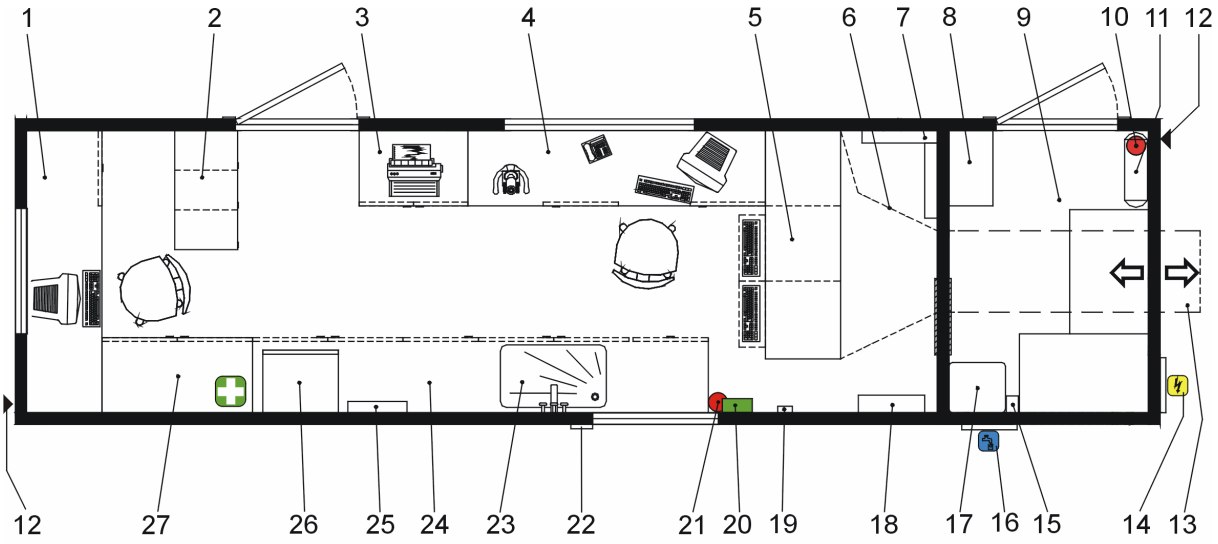
GEOLOGICAL FIELD LABORATORY

Onshore Model

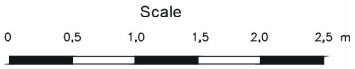
Onshore Logging Unit

Modern, high quality field laboratories complete with instrumentation for on-line operation, local network operations and data transmission. The Laboratory construction fulfils the requirements demanded by the normal logging operations as well as the requirements under more difficult conditions.

- Several different types of laboratory are available. These differ in dimensions and basic equipment, as well the type of instrumentation and sensors, which is dictated by the requirements of the client.
- Each unit can be equipped according to the type of operation at short notice.



1 Work Area Wellsite Geology
2 Lockers
3 Printer and Plotter Rack
4 Work Area Geology
5 Instrument Racks with Keyboards
6 Air Duct
7 Sensor Signal Input Box
8 Gas Bottle Rack
9 Storage Room
10 Fire Extinguisher
11 Air Compressor
12 Grounding
13 Air Conditioner
14 Mains Supply/CEE Socket
15 Frost Protector
16 Water Supply
17 Boiler
18 Circuit Breaker Box
19 Ammeter/Voltmeter
20 Eye Wash Station
21 Fire Extinguisher
22 Outlet/Waste Water
23 Sink Unit
24 Cutting Preparation Area, Storage for Chemicals
25 Ventilator
26 Cuttings Drying Oven
27 Locker, First Aid Kit



Differences in the distribution of individual components are possible

Plan view of a standard 30' (9m) GEO-data field laboratory

- ► Easy to equip instrument panels with 19" drawers
- ► Practical working areas with large working surfaces
- ► Sample preparation area constructed from stainless steel
- ► Air conditioner (retractable for transportation)
- ► Standard safety equipment
- ► Uninterruptible power supply to maintain the operation of the computer systems and instrumentation of importance for up to 30 minutes during rig power failures
- ► Separate storage room for spare part, consumable materials, cable and instrument storage
- ► Standard Inventory: Office chairs, Working area illumination, Telephone, Refrigerator Safety equipment
- ► Data acquisition and processing: Controller/Central unit, Visual display PC with Colour Monitor, Electronic data processing for geology working area, Internal network for drilling engineering, Software
- ► Diverse sensors and instruments *according to client specification*
- ► Equipment for geological processing *according to client specification*

Description

The field laboratory is designed to allow the easy equipping of the instrument panels. Sufficient working area is available for three persons. A large sink constructed from stainless steel permits the effective preparation of samples. The integrated air conditioner allows adequate working conditions for personnel and equipment.

Inspections

An annual inspection by accredited electrical technicians takes place according to the regulations laid out in the German Mining Regulations for Electrical Equipment (ElbergV). Inspections by electricians take place every two months and supervisory electricians carry out biannual inspections.

Technical Data

	Onshore Logging Unit
▪ **Model or type**	30’ acclimatised standard onshore unit
▪ **Specifications**	3 mm sheet steel walls (galvanised and paint protected) with steel framework according to ISO standards. Sandwich construction with 70 to 120 mm inner wall insulation. Windows with insulated glazing, blinds and external security shutters
▪ **Electrical supply**	400 V, 50/60 Hz, 32 A in 3 phases. Connection to other voltages possible at any time when connected to a transformer
▪ **Water supply**	¾” connection to a maximum of 4.5 bar
▪ **Compressed air supply**	Integrated air compressor (maximum pressure 7 bar)
▪ **Safety equipment**	Fire extinguishers (1 x Powder, 1 x CO2) Eye rinsing station First aid kit
▪ **Operating temperatures**	-40 °C ... + 50 °C
▪ **Dimensions**	L 9.15m x W 2.50m x H 2.70m
▪ **Weight**	Approximately 13 tons

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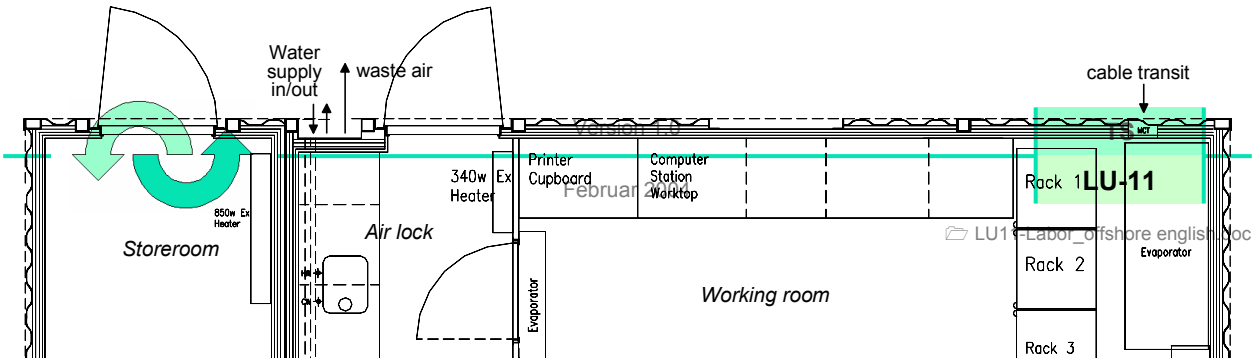
GEOLOGICAL Field LABORATORY

Type Offshore

Offhore Logging Unit

Modern, best quality field laboratories with all possible safety standards, certified pursuant to DNV for use as A60 Zone I Mudlogging Unit, equipped with all instruments for an advanced Surface Logging, geological equipment and data recording and visualizing PC's including network operations at the rig site and data transfer to client's headquarter. The Laboratory construction fulfils the requirements demanded by most difficulties logging conditions on offshore locations.



Differences in the distribution of individual components are possible

Plan view of 30' Offshore Logging Unit

- High safety standard with 6mm over pressurised atmosphere, air changes 6times per hour, pneumatically fire dampers, monitoring and alarm equipment for gas, smoke, air movement and pressurisation with shut down functions.
- Easy to equip instrument panels with 19" drawers
- Practical working areas with large working surfaces
- Sample preparation area in air lock constructed from stainless steel with hot water supply; separated from the main working area by an air lock.
- 2-Off three piece split air conditioners, each providing 9.4 kW cooling. Design ambient temperature +46 C^{o} , R417A refrigerant. 1-Off Ex 9kW duct mounted air pre heater + 6kW re-heater (design temperature – 40 C^{o}.
- Uninterruptible power supply to maintain the operation of the computer systems and instrumentation of importance for up to 30 minutes during rig power failures
- Separate storage room for spare parts, consumables, cable and instrument storage
- Inventory: office chairs, lighting, ex proof telephone, fridge, safety equipment
- Data recording and –processing: Controller server, Visualisation PC with flat screen, PC for geologist with flat screen, network terminal, PC for data transfer, software
- Geological Equipment with drying oven (vented via fire damper in air lock) binocular, Sieves, chemicals for sample preparation, package material, automatically calcimeter, exact scale , UV lamps, sample trays, sample pick needles, etc.

Description

The offshore field laboratory is designed as A 60 Zone I Logging cabin.
The sample preparation area is separated in air lock.
The installed work places are formed ergonomically. Sufficient working area is available for three persons.

Certifications

The unit is certified by DET NORSKE VERITAS according to:
CN 2.7-1 Offshore Container
CN 2.7-1 Annex 1 (type approval of lifting sets for offshore containers
CN 2.7-2 Offshore Service Containers
- electrical -

Equipment

As per client specification

Technical data

	Offshore Logging Unit
▪ **Type oder model**	30' over pressurised offshore unit, fully air conditioned
▪ **Specifications**	4-5 mm sheet steel walls (galvanised and paint protected) with steel framework according to BS EN Fe-430A standards. Sandwich construction with 70 to 120 mm inner wall insulation. Windows with insulated glazing, blinds and external security shutters as well as lifting lugs and slings according offshore regulation
▪ **Electrical supply**	3 phases 380 to 480 V possible, 50/60 Hz, 20 kVA 24 Volt delivered from the controller room
▪ **Water supply**	¾" connection to a maximum of 4.5 bar
▪ **Compressed air supply**	External supply of compressed air from the rig
▪ **Safety equipment**	Fire extinguishers (1 x Powder, 1 x CO2) Eye rinsing station First aid kit
▪ **Operating temperatures**	-40 °C ... + 50 °C
▪ **Dimensions**	L 9,12 x W 2,79 x H 2,84 m
▪ **Weight**	ca. 15 to 20 tons

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