

## Instruments/Tooling

Spare Hydraulic Channels

17 spare channels

1 way high flow circuit with two seven function manipulators fitted. 24 channels available, 12 by-directional solenoid & 12 by-directional proportional @210 bar 15 litres per minute. Two of these are used for the Bio box drawers. High flow channel @ 40 litres per minute and pressure of 210 bar non-reversible.

Gyro	FOG, Gyro Compass
DVL	1200kHz RDI Workhorse
Altitude	Tritech PA500
Depth	Digiquartz 8000
Sonar	Super SeaKing

## Optional Items

Multi-beam Configured to accommodate SeaBat 7125 with Octans subsea Gyro

Spare Electrical/  
Electronic Ports 10 x Analogue I/O Ports  
12, 24 & 48VDC, 110VAC PSU's available  
8 x RS485/232 Ports

Manipulators

7F: 2 x long reach 7F Schilling Orion (Normally fitted)

5F: 1x Rigmaster 2, 5F Grabber

Slurp Sampler: 1 x 75mm sampler with single chamber sample container

Bio Boxes: 2 x retractable Bio Boxes 535mm (w) x 400m (l) x 260mm (h). Additional sampling boxes can be fitted

Hydraulic cable cutters

Sediment corers: 12 x 75mm dia x 280mm

## Control System

Hardware: SMD DVECS ROV Control

Dual touch-screens, 16 x 19" TFT Video Wall

6 x DVD recorders + single overlay (3 PAL overlays)

1 x KI Pro HD recorder +overlay

1 x Sony HVR 1500 tape recorder

1 Drobo raid storage array

1 Apple MAC book complete with Final Cut Pro

2 PC's available for science use.

Control Cabin	20ft,A60 ISO
Workshop Cabin	20ft,A60 ISO
Power	380-480VAC 50/60hz

## TMS

Type	SMD Tophat TMS
Tether Length	400metres max
Features	3 x cameras (1 downwards facing)

## Handling System

Umbilical winch	SMD winch with 3300m max 31.7mm SWA
Weight	23.4 Tonnes
A-Frame	Docking head with snubber and rotator
Weight	18.07 Tonnes

## Deployment

3 deployment Modes:

- Using TMS / LARS
- Live boating from LARS without TMS
- For shallow rapid deployment operations, vessel's A-frame/Crane can be used with soft tether and subsea locklatch. For this mode a self contained 450 KVA generator is available.

# Remotely Operated Vehicle

## Holland I

### Technical Specifications



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Marine Institute  
Foras na Mara

## General

The *Holland 1* Remotely Operated Vehicle (ROV) is a scientific deepwater ROV system. The system is designed for deployment from the Marine Institute vessel *RV Celtic Explorer* as well as other vessels of opportunity. The system consists of an SMD Quasar work class Hydraulic ROV, Tether Management System (optional), A-Frame launch and recovery system and a deepwater (3000m) winch. The system is controlled from a 20' control container and comes with a fully equipped 20' workshop container.

- The system has been equipped with a survey skid to accommodate a wide range of scientific equipment including various biological and sediment sampling and multi-beam bathymetry systems.
- The vehicle is equipped with seven and five function manipulators to enable a wide variety of intervention and sampling procedures to be completed.
- The vehicle is equipped with conventional video and still cameras and a high definition camera system as well as powerful lighting to ensure high quality observation and documentation of seafloor images.
- The ROV is designed to be used in Tether Management System or live boating mode to ensure optimal system configuration in deep or medium depth locations.



## Vessel Requirements

- Dynamic positioning
- Deck capacity for 2 x 20' containers, 9m x 4.5m A-frame and winch
- 380-480vac power supply 200kva for control van (with high startup load), 70kva for umbilical winch and A-Frame
- USBL system
- Total system weight; 75Tonnes

## Ratings/Dimensions

Depth rating	3000msw
Length	3018mm
Width	1810mm
Height	1790mm
Weight in Air	3240kgs
Payload (with manipulators)	312kgs with tool skid removed. With tool skid & basic survey equipment fitted approximately 100kg payload free.
Through Frame Lift	2000kgs
Depth Rating	3000msw

## Survey Skid

Length	3020mm
Height	450mm
Width	1761mm

## Propulsion

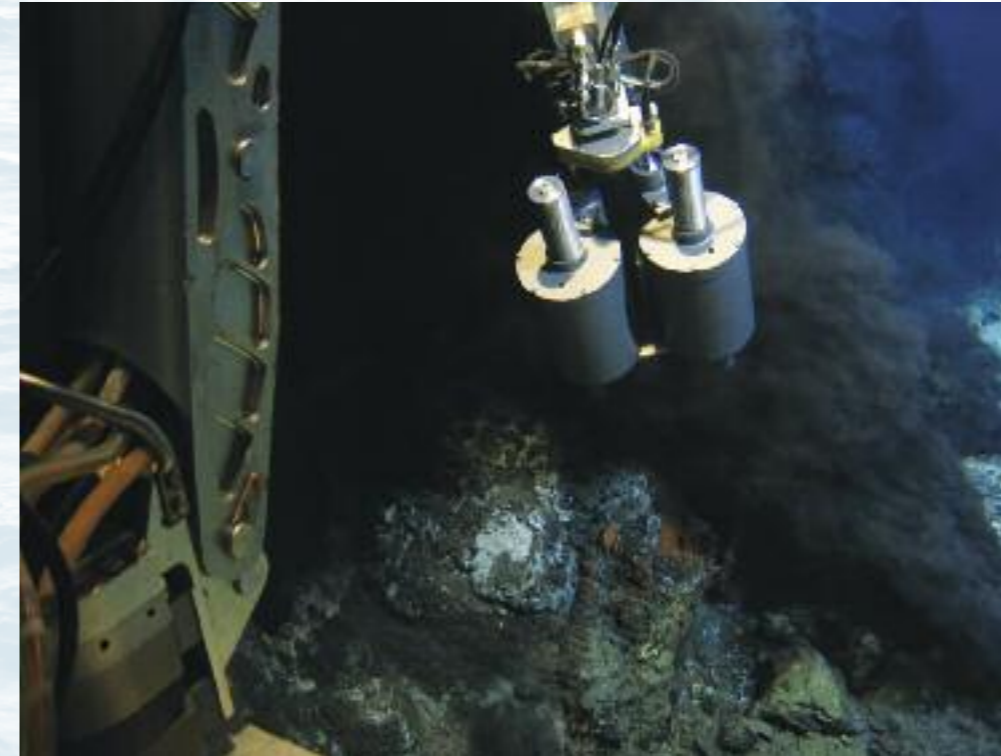
Hydraulic Power	100hp
Thrusters	
- Horizontal:	4x Curvetech HTE 380BA
- Vertical:	3x Curvetech HTE 300BA
- Forward bollard pull	>800kgf
- Vertical bollard pull	>800kgf
- Lateral bollard pull	550kgf

## Auto Features

Depth, Altitude, Heading, Position, Step

## Cameras

- 8 Pal composite video channels
- 1 x HDTV channel
- 1 x near sit
- 1 x b/w
- 1 x oe 14-366 colour zoom
- 1 x oe 14-208 Digital stills
- 2 x oe 14-502a HDTV inspection camera
- 1 x Pegasus + colour camera
- 2 x aurora colour camera tooling
- 1 mini tooling camera with integrated ring light



## Lighting/Measurement

- 8 x variable intensity 250 watt halogens
- 2 x 400watt DSPL CARC2 HMI
- 2 x 25,000 Lumen APHOS LED lights (Cathx Ocean)
- 2 x 24 volt red lasers

## Positioning

- USBL 1 IXSEA GAPS
- USBL 2 Sonardyne Ranger 2
- Beacons: 5 x MT8 2 x MT 9 beacons  
3 x WTM 8190 beacons

