

# eM1-7 Electric Manipulator



## The World's Most Advanced Seven-function Electric Work Class Manipulator

The Seaeye all-electric manipulator features an advanced control system, allowing both manual and automated operation. Highly accurate, modular electric joints enable enhanced arm control, path planning solutions and integrated diagnostics. Lift capacity and range of motion exceeds that of hydraulic equivalents whilst also providing higher reliability, lower servicing and better precision.



### Significant Advantages

The Seaeye eM1-7 offers significant advantages over hydraulic alternatives, including more precise positioning with force sensing, increased dexterity, low water weight and great reliability - expanding the potential for more autonomous and resident applications.

### Active Power Management

Active power management helps regulate demand and manages the regenerative power created with free-fall loads. Dual seven-function electric manipulator configurations provide maximum dexterity.

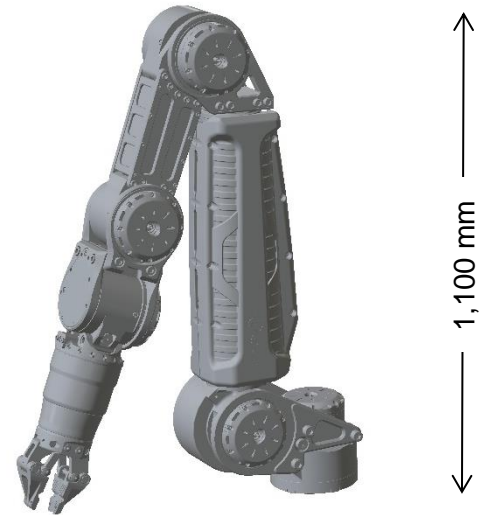
### Increased Automation

Advanced arm control comes from position and force sensing, repeatability and in-built intelligence. Direct end effector control can be achieved when coupled with an intuitive human input device and an inverse kinematics system.

World leader in electric underwater robotics

## Features

- All electric with simple power and Ethernet interface
- On-board processing for advanced control
- Advanced kinematics options
- Precise positioning
- Position and force sensing
- Active diagnostic system
- Power and status LEDs
- Integrated compensators
- Environmentally considerate compensation oil
- Wrist camera option
- Interchangeable parallel and intermeshing jaw options



## Pendant Controller

eM1-7's Pendant Controller follows a familiar manipulator controller design, but includes an advanced user interface and processor allowing the operator to configure it to suit their needs. The manipulator speed and sensitivity settings are easily adjusted using the touch-screen interface, while functions can be assigned to physical buttons to the operator's preference. Macros can be configured so that movements can be easily repeated, while diagnostic data and graphing is easy to read and is intuitive.



## Optional Equipment

The Wrist module is designed to accommodate industry-standard jaws, with a Parallel Jaw provided as standard. Optional configurations include Three-Finger and Four-Finger Interlocking Jaws.

The manipulator can be fitted with an optional wrist-mounted high definition IP camera. The design is modular for easy installation, and the camera is contained within a titanium housing with sacrificial acetal impact protection side contours. The camera also features dimmable LED lights.



3 & 4 Finger IM Jaws



HD IP Wrist Camera, with dimmable LED Lights

## Technical Specifications

Material	Aluminium
Dexterity	7 functions (6 degrees of freedom and jaws)
Maximum Reach	2030 mm
Lift Capacity (full extension)	122 kg
Lift Capacity (min extension)	454 kg
Wrist Torque	330 Nm
Weight (in water)	84 kg
Weight (in air)	113 kg
Depth	4,000 m
Standard Jaw	3.8 inch parallel

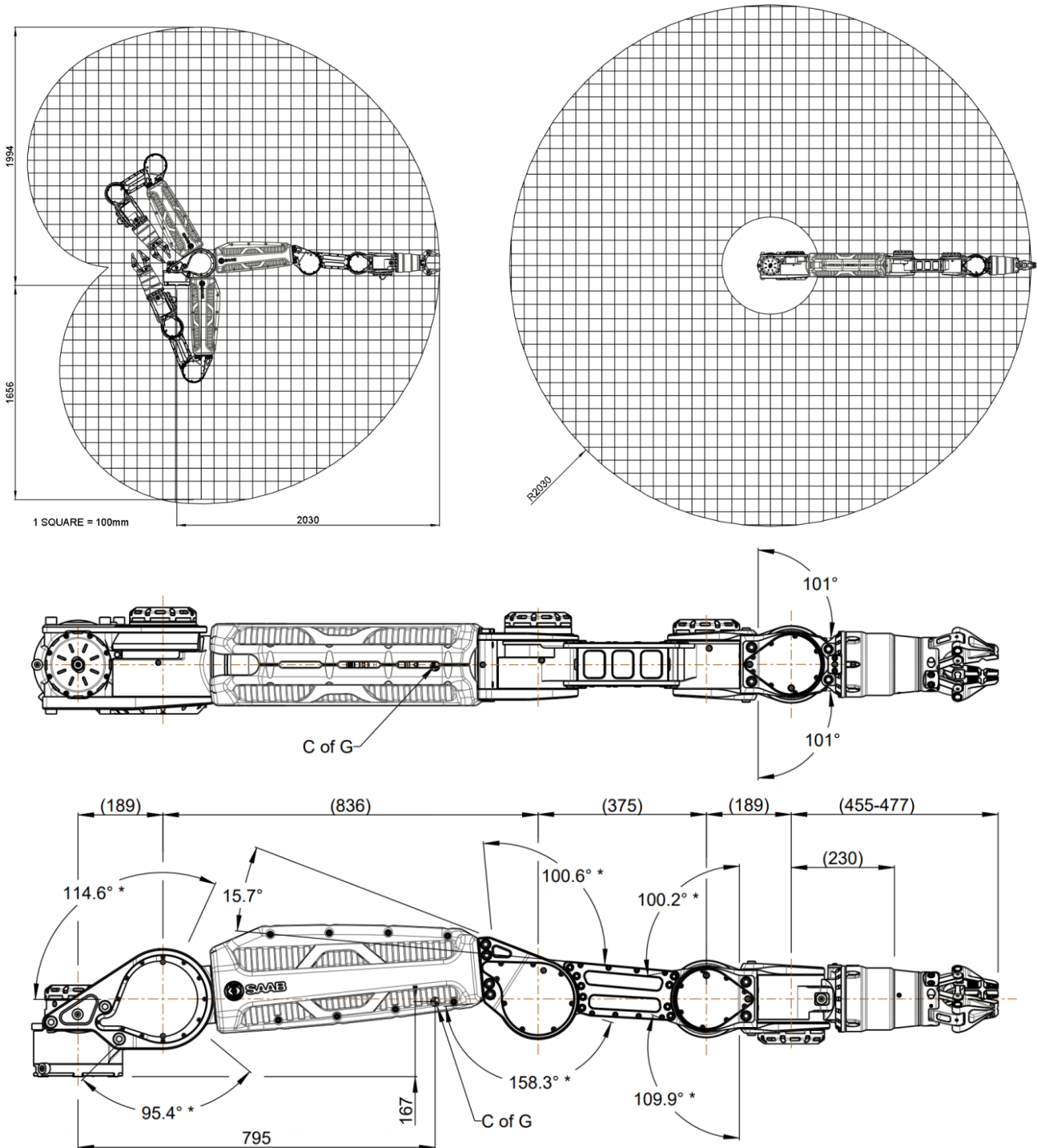
## Electrical Characteristics

Input Voltage	500-800VDC 110VAC option
Power requirement	2.3kW
Control	Ethernet 100 Mbit/s
Input Device	Pendant Controller; Game controller and space mouse options

# eM1-7 Electric Manipulator



## Dimensions and Range of Movement



NOTE: For the safety of each joint, the software reduces the angles by approximately 2°.

## Saab UK - World leader in electric underwater robotics

Phone: +44 (0) 1489 898000

Web: [www.saabseaeye.com](http://www.saabseaeye.com)

Email: [solutions@saabseaeye.com](mailto:solutions@saabseaeye.com)

© Saab UK 2025 Revision: 2

SPECIFICATIONS MAY CHANGE WITHOUT PRIOR NOTICE AND ARE SUBJECT TO SYSTEM CONFIGURATION