

# Redox One Module 100



Redox One Ltd. is a subsidiary of Tharisa PLC and one of the leading companies specializing in the design, manufacturing, and integration of Iron-Chromium flow battery energy storage systems for utility-scale applications.

The company provides a robust and innovative energy storage solution that improves grid operation, seamlessly integrates renewable energy and contributes to creating a sustainable and carbon-neutral future.

## Battery Performance DC

Rated DC Power [kW]	8	8
Charge/Discharge [%]	82	82
Charge Time [h]	12.1	12.1
Discharge Time [h]	10.0	10.0

Nominal System DC Voltage [V]	48	24
Max charge DC Voltage [V]	64.8	32.4
Min discharge DC Voltage [V]	43.2	21.6

Usable Energy at 100% Const Rated DC Power		
Auxiliary not deducted [kWh]	80	80
Rated Energy [kWh]	77	77
Auxiliary Energy [%]	4	4

Usable Energy at 50% Const Rated DC Power		
Auxiliary not deducted [kWh]	105	105
Rated Energy [kWh]	99	99
Auxiliary Energy [%]	6	6

Max DC Current [A]	204	408
--------------------	-----	-----

DC Round Trip Efficiency (RTE) [%]	≥ 70	≥ 70
------------------------------------	------	------



## Mechanical Data

---

Enclosure Type	20' ISO HC-Container
Length, container without access space [m]	6.058
Width, container without access space [m]	2.438
Height, container without access space [m]	2.896
Area [m <sup>2</sup> ] includes access space	40
Total Weight in Operation [t]	17
Degree of Protection	IP54

## General

---

Design Lifetime	20 years
Cycle Life	>20,000 @100% DoD
Standards	CE, IEC 62932-2-1, IEC 62932-2-2, IEC 62932-1, IEC EN 61140, IEC EN 60364
Ambient Temperature Range [°C]	0 - 50
Operating Temperature Range [°C]	45 - 65
Operating Humidity [%]	≤ 95
Operating Altitude [m]	2000 (more on request)
Installation Type	Pad-mount

## Battery Interface, Control and Monitoring

---

Protection DC Side	Fuses, main switch, system monitoring, surge protection
Communication	MODBUS TCP/IP
Communication Interface	Web-based local UI (performance history, remote control, alerts) (on request)
Data Life Cycle Management and Storage	data life cycle management, long term data storage for the lifetime
Response Time	<1s response time guaranteed in normal operation
Temperature management	Active electrolyte heating, enclosure ventilation
Electrolyte solution	HCl-based Fe/Cr-electrolyte, non flammable, re-usable

Due to ongoing innovation, improvements, and product enhancements, the technical specifications in this document are subject to change and are not guaranteed. Redox One Ltd. reserves the right to update or change its products or this technical data without prior notice and customers should not rely upon these or any technical specifications which are not made part of a definitive binding agreement.

**REDOX**<sup>1</sup>