



SUPERIOR

Unrivalled power
performance

NETYS RT

Lithium

1 to 3 kVA



OBJECTIVES

The aim of these specifications is to provide:

- the information required to choose the correct uninterruptible power supply for a specific application,
- the information required to prepare the system and installation site.

The specifications are intended for:

- installation engineers,
- design engineers,
- engineering consultants.

INSTALLATION REQUIREMENTS AND PROTECTION

Connection to the mains power supply and load(s) must be implemented using cables of suitable size, in accordance with current standards. If not already present, an electrical control station which can isolate the network upstream of the UPS must be installed. This electrical control station must be equipped with a circuit breaker (or two, if there is a separate bypass line) of an appropriate rating for the power drawn at full load.

If an external manual bypass is required, only the model supplied by the manufacturer must be installed.

We recommend fitting two metres of unanchored flexible cable between the UPS terminals and the cable anchor (wall or cabinet). This makes it possible to move and service the UPS.

For detailed information, see the installation and operating manual.

1. ARCHITECTURE

1.1 RANGE

NETYS RT Lithium is a 1 to 3 kVA range of high performing UPS systems designed to:

- ensure 24 / 7 / 365 availability and business continuity for datacentre infrastructure,
- avoid data losses and downtime of company operations,
- reduce the electrical infrastructure's total cost of ownership,
- adopt a sustainable development approach.

Models			
Rated power (VA)	1000	2000	3000
NETYS RT Lithium	•	•	•

Each family has been specifically designed to meet the demands of loads in specific application contexts, in order to optimise product features and facilitate integration within the system.

2. FLEXIBILITY

2.1 PRODUCT DIMENSION FROM 1 TO 3 kVA

Dimensions				
Cabinet type		Width (W) [mm]	Depth (D) [mm]	Height (H) [mm]
	1000	438	445	85.5
	2000 3000	438	600	85.5

The equipment has been designed with a minimum net and gross footprint (the actual space occupied by the unit and the space required around it for maintenance, ventilation and access to operating mechanisms and communication devices).

All of the control mechanisms and communication interfaces are located in the upper front section.

The intelligent design also provides easy access for maintenance and installation.

The air inlet is on the front, with outflow to the rear.

2.2 RELIABILITY

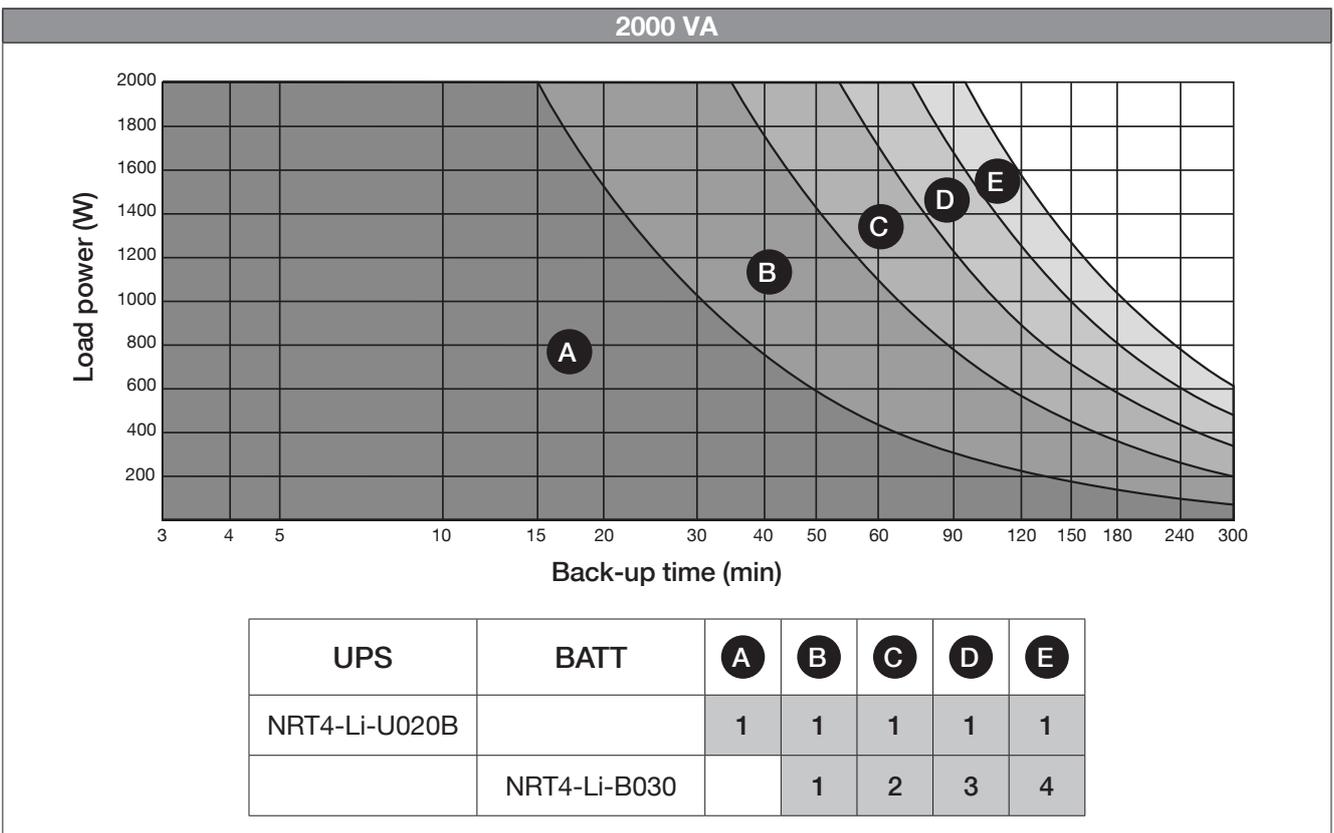
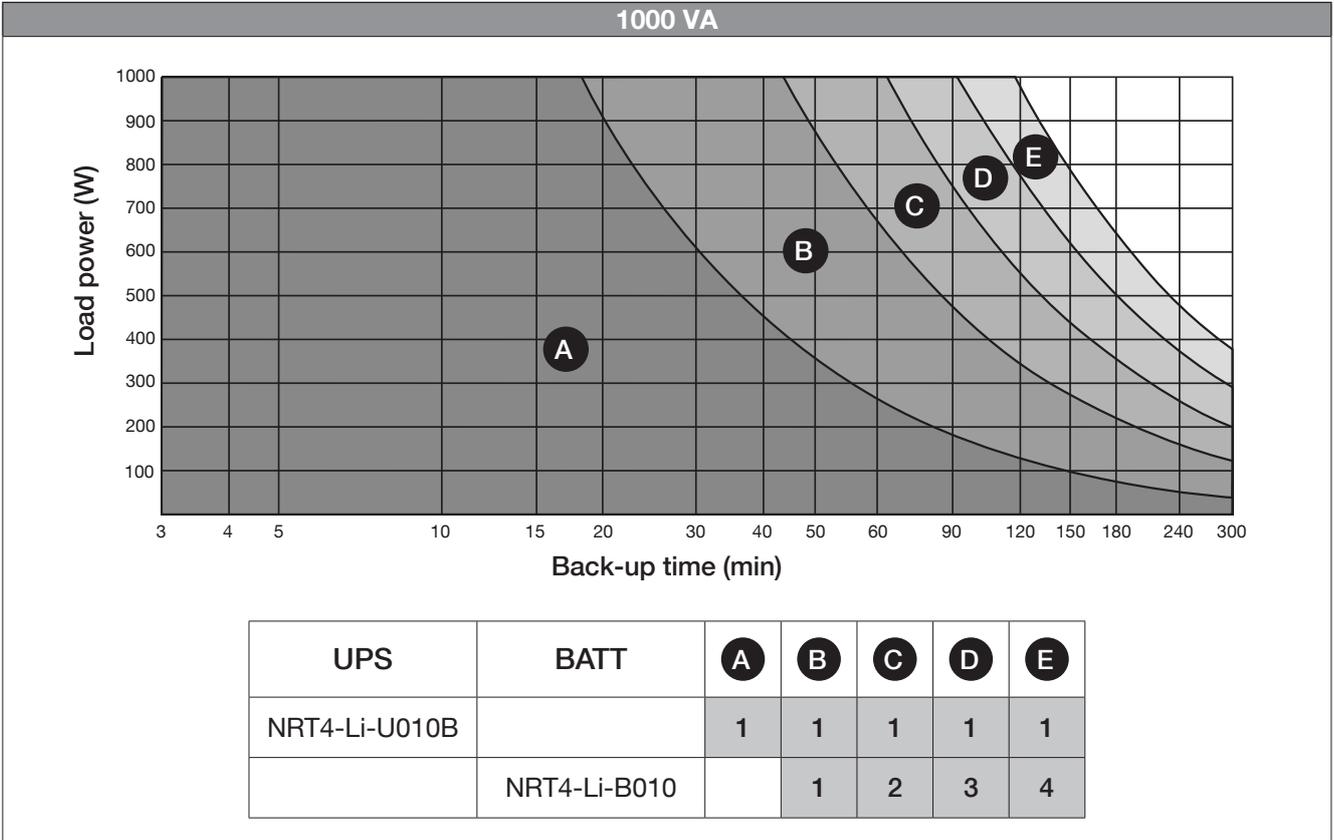
Reliability is the most critical factor for any UPS solution designed to protect and manage the continuity of activities and services.

NETYS RT Lithium MTBF exceeds the market standard, and Socomec officially declares its MTBF data.

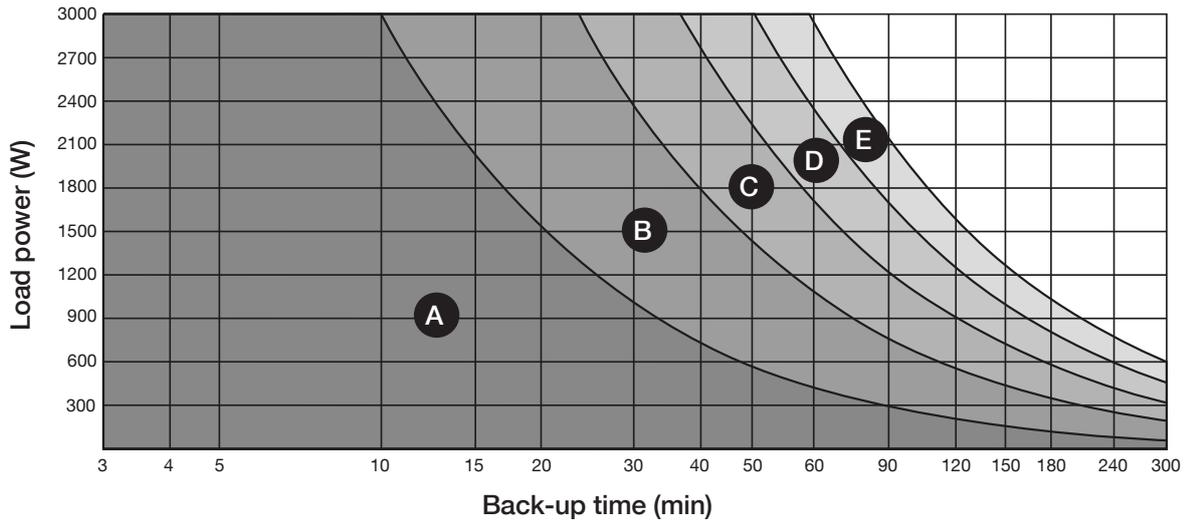
2.3 FLEXIBLE BACK-UP TIME

Different back-up times are possible by using models with internal battery or external battery cabinets. Batteries are installed on acid-proof trays and connected by means of polarised connectors to facilitate their maintenance. To guarantee maximum back-up time availability and battery life, the NETYS RT Lithium series is equipped with an EBS (Expert Battery System).

Use the following charts to select the UPS model in relation to power and back-up time.



3000 VA



UPS	BATT	A	B	C	D	E
NRT4-Li-U030B		1	1	1	1	1
	NRT4-Li-B030		1	2	3	4

3. STANDARD FEATURES AND OPTIONS

Availability	
●	Standard feature
○	Available as option

Features	NETYS RT Lithium	Notes	Reference
	1000-3000 VA		
Communication Option			
USB port	●		
RS 232 port	●		
EPO / REPO	●		
Dry contact 1 input, 1 output	●		
Relay board card 1 input, 5 output programmable relays	○	  Net Vision card	NRT4-OP-ADC
Net Vision card or box <i>(professional WEB/SNMP interface for UPS monitoring)</i>	○	  Relay board card (only with NET-VISION8CARD)	NET-VISION8CARD NET-VISION8BOX1
EMD <i>(Environmental Monitoring Device: temperature, humidity, 2 dry contacts)</i>	○	  Net Vision card	NET-VISION8-EMD
Electrical Option			
Input Output cable	●		
IEC UK adaptor	○		ADP-IEC-UK-10A
IEC DE adaptor	○		ADP-IEC-DE-10A
USB cable	●		
External maintenance bypass	○		MBP-1U-IEC
Mechanical Option			
Rail for rack mount	●		NRT4-OP-RAIL
Rack brackets	●		
Tower stands	●		
Cable lockers	●		

-  Required option
-  Incompatible option

4. SPECIFICATIONS - NETYS RT LITHIUM

4.1 INSTALLATION PARAMETERS

Installation parameters				
Rated power (VA)		1000	2000	3000
Phase in / out		1Ph IN / 1Ph OUT		
Active power	W	1000	2000	3000
Rated / maximum rectifier input current (EN 62040-3) ⁽¹⁾	A	4,9 / 10	9,4 / 10	14,1 / 16
Inverter output current @ 230 V	A	4,4	8,7	13,1
Sound level	dBA	< 45	< 50	
Power dissipation in nominal conditions ⁽¹⁾	W	83	156	187
	kcal/h	71	134	161
	BTU/h	283	532	638
Dimensions	Width	mm	438	438
	Depth	mm	445	600
	Height	mm	85,5	85,5
Weight with batteries (depending on number of batteries)	kg	15,1	21,3	21,3

(1) Considering nominal input current (230 V, battery charged) and rated output active power.

4.2 ELECTRICAL CHARACTERISTICS

Electrical characteristics - Rectifier Input				
Rated power (VA)		1000	2000	3000
Phase in / out		1Ph IN / 1Ph OUT		
Rated mains supply voltage	220 V / 230 V / 240 V 1Ph + N			
Voltage tolerance (phase to neutral)	110 V to 300 V (160-300 full load (at 100 V derating 50% load))			
Rated frequency	50 / 60 Hz (selectable)			
Frequency tolerance	From 40 to 70 Hz			
Power factor (input at full load and rated voltage)	≥ 0.99			
Total harmonic distortion (THDi)	< 5% (R and RCD load)			
Max inrush current at start-up	A	< 8*I _{rms}		

Electrical characteristics - Bypass			
Rated power (kVA)	1000	2000	3000
Phase in / out	1Ph IN / 1Ph OUT		
Bypass rated voltage (phase to neutral)	187 V to 264 V		
Bypass rated frequency	50 Hz / 60 Hz		
Bypass frequency tolerance	±10%		

Electrical characteristics - Inverter			
Rated power (kVA)	1000	2000	3000
Phase in / out	1Ph IN / 1Ph OUT		
Rated output voltage phase neutral (selectable)	200 V / 208 V / 220 V / 230 V (default) / 240 V at 200 V derating to 80%, at 208 derating to 90%		
Output voltage tolerance	± 1%		
Rated output frequency	45 Hz to 55 Hz (at 50 Hz) 54 Hz to 66 Hz (at 60 Hz)		
Output frequency tolerance	± 0,1 Hz		
Load crest factor	3:1		
Voltage harmonic distortion (with linear load)	< 1%		
	5 min	W	1050 < Load < 1250
	30 sec	W	1250 < Load < 1500
	500 ms	W	Load > 1500
			2100 < Load < 2500
			2500 < Load < 3000
			3150 < Load < 3750
			3750 < Load < 4500
			Load > 3000
			Load > 4500

Electrical characteristics - Efficiency			
Rated power (kVA)	1000	2000	3000
Phase in / out	1Ph IN / 1Ph OUT		
Double conversion efficiency (normal mode - 230 V @ full load)	up to 94,1%		
Efficiency in EcoMode	up to 97%		

Electrical characteristics - Environment			
Rated power (kVA)	1000	2000	3000
Phase in / out	1Ph IN / 1Ph OUT		
Storage temperatures	-25 to +55 °C (15 to 25 °C for better battery life)		
Working temperature	0 °C to 45 °C (40 °C to 45 °C derating 80%)		
Maximum relative humidity (non-condensing)	95%		
Maximum altitude without derating	1000 m		
Degree of protection	IP20		
Portability	Better than ISTA		
Colour	RAL7016		

Electrical characteristics - Battery			
Rated power (kVA)	1000	2000	3000
Phase in / out	1Ph IN / 1Ph OUT		
Battery internal (pieces)	15 series x 3 parallels	24 series x 3 parallels	
Battery external (pieces)	15 series x 4 parallels	24 series x 4 parallels	
Maximum recharge current (A)	A	1,5	

4.3 RECOMMENDED PROTECTION

RECOMMENDED PROTECTION DEVICES - Input ⁽¹⁾			
Rated power (kVA)	1000	2000	3000
Phase in / out	1Ph IN / 1Ph OUT		
C curve circuit breaker (A)	10	16	16
D curve circuit breaker (A)	-		

RECOMMENDED PROTECTION DEVICES - Input residual current circuit breaker ⁽²⁾			
Rated power (kVA)	1000	2000	3000
Phase in / out	1Ph IN / 1Ph OUT		
Input residual current circuit breaker	0,03A		

RECOMMENDED PROTECTION DEVICES - Output ⁽³⁾			
Rated power (kVA)	1000	2000	3000
Phase in / out	1Ph IN / 1Ph OUT		
Short-circuit inverter current (A) (when AUX MAINS is not present)	20	36	54
B curve circuit breaker ⁽³⁾ (A)	3	6	8
C curve circuit breaker (A)	1.6	3	4

CABLES - Maximum cable section			
Rated power (kVA)	1000	2000	3000
Phase in / out	1Ph IN / 1Ph OUT		
Rectifier terminals (flexible cable)/(rigid cable) mm ²	IEC320 C14	IEC320 C20	
Battery terminals (flexible cable)/(rigid cable) mm ²	connector		
Output terminals (flexible cable)/(rigid cable) mm ²	8 x IEC320 C13		8 x IEC320 C13 + 1 x IEC320 C19

- (1) Rectifier protection should only be considered in the event of separate inputs. The bypass protection is given by recommendation. When the bypass and rectifier inputs are combined (common input), the general input protection rating must be whichever is the highest (bypass or rectifier).
- (2) Must be selective with residual current circuit breakers downstream of the UPS connected to the UPS output. If the bypass network is separate from the rectifier circuit, or in the event of a parallel UPS configuration, use a single residual current circuit breaker upstream of the UPS.
- (3) Selectivity of distribution after the UPS with inverter short-circuit current (short-circuit with AUX MAINS not present). The rating of the protection can be increased by "n" times downstream of a parallel UPS system, with "n" equal to the number of parallel modules.

5. REFERENCE STANDARDS AND DIRECTIVES

5.1 OVERVIEW

The equipment, installed, used and serviced in accordance with its intended use, its regulations and standards, its manufacturer instructions and rules, is in compliance with the relevant Union harmonisation legislation:

LVD 2014 / 35 / EU

DIRECTIVE 2014 / 35 / EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014, on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits.

EMC 2014 / 30 / EU

DIRECTIVE 2014 / 30 / EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014, on the harmonisation of the laws of the Member States relating to electromagnetic compatibility.

RoHS 2011 / 65 / EU

Directive 2011 / 65 of the European parliament and of the council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

RoSH II 2015 / 863

Directive of the European Parliament and of the council of 31 March 2015 amending Annex II to Directive 2011 / 65 / EU of the European Parliament and of the council as regards the list of restricted substances

WEEE 2012 / 19 / EU

Directive of the European Parliament and of the council of 4 July 2012 on waste electrical and electronic equipment (WEEE).

Battery Regulation UE 2023 / 1542

Regulation (EU) of the European Parliament and of the council of 12 July 2023 concerning batteries and waste batteries, amending Directive 2008 / 98 / EC and Regulation (EU) 2019 / 1020 and repealing Directive 2006 / 66 / EC

5.2 STANDARDS

5.2.1 SAFETY

- EN 62040-1 Uninterruptible Power System (UPS) - Part 1: General and safety requirements
- IEC 62040-1 Uninterruptible Power System (UPS) - Part 1: Safety requirements (CB scheme by TÜV)

5.2.2 ELECTROMAGNETIC COMPATIBILITY

- EN 62040-2 Uninterruptible Power System (UPS) - Part 2: Electromagnetic compatibility (EMC) requirements (tested and verified by third party)
- IEC 62040-2 Uninterruptible Power System (UPS) - Part 2: Electromagnetic compatibility (EMC) requirements

5.2.3 TEST AND PERFORMANCE

- EN 62040-3 Uninterruptible power systems (UPS). Methods of specifying the performance and test requirements

5.2.4 SAFETY REQUIREMENTS FOR SECONDARY LITHIUM CELLS AND BATTERIES

- IEC 62619: 2022 Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for secondary lithium cells and batteries, for use in industrial applications

5.2.5 SAFETY REQUIREMENTS FOR TRANSPORTATION OF LITHIUM BATTERY

- UN 38.4 UN Manual of Tests and Criteria Sect. safety tests for the transport of lithium batteries

5.3 SYSTEM AND INSTALLATION GUIDELINES

When carrying out electrical installation, all the above standards must be observed. All national and international standards (e.g IEC60364) applicable to the specific electrical installation including batteries must be observed. For further information refer to 'Technical specifications' chapter in the user manual.



ELITE UPS: a mark of efficiency

Socomec, as CEMEP UPS manufacturer member, has signed a Code of Conduct put forward by the Joint Research Centre of the European Commission (JRC), to ensure the protection of critical applications and processes ensuring 24/7 continuous high quality supply. The JRC commits to mitigating energy losses and gas emissions caused by UPS equipment, therefore maximising UPS efficiency.