

RX 1500÷3000 S/E ULN SERIES

In order to comply the increasing demand of very low NOx emissions, Riello has developed a new product range for high power combustion, based on PREMIX low emission technology, suitable to achieve the most restrictive emission limits.

Riello RX S/E ULN Premix Range, which provides high modulation ratios and low pollution emissions, representing the ideal solution for condensing boilers and industrial processes, is based on a platform with asynchronous motors fans.

In the RX S/E ULN range, from 270 to 3210 kW, the gas is introduced downstream to the fan, so a sealed ventilation structure is not necessary because the gas and air mixture does not take place inside the aspiration circuit.

The Ultra Low NOx emission performance is achieved while maintaining high reliability of operation; on all models a high ignition reliability is assured by a Pilot Ignition system. The burners operation is under control of a Digital Burner Management System able to manage the air-fuel ratio by independent servomotors in order to obtain a perfect output control and to assure a correct combustion and safe operation on all modulation range.

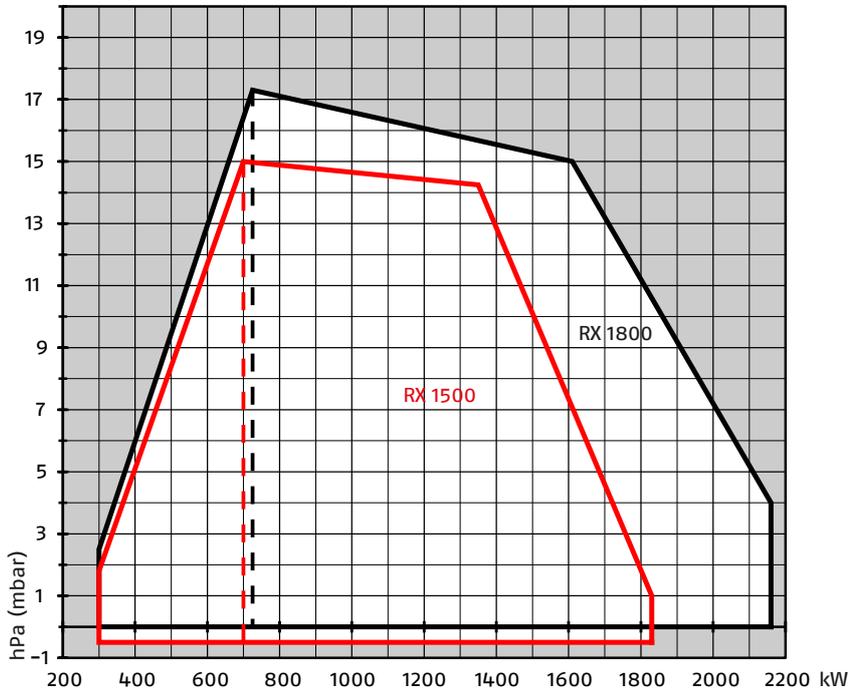


RX 1500 S/E ULN	270	÷	1650	kW
RX 1800 S/E ULN	300	÷	1940	kW
RX 2500 S/E ULN	375	÷	2485	kW
RX 3000 S/E ULN	640	÷	3210	kW

Ultra Low NOx Modulating Premix Gas Burners

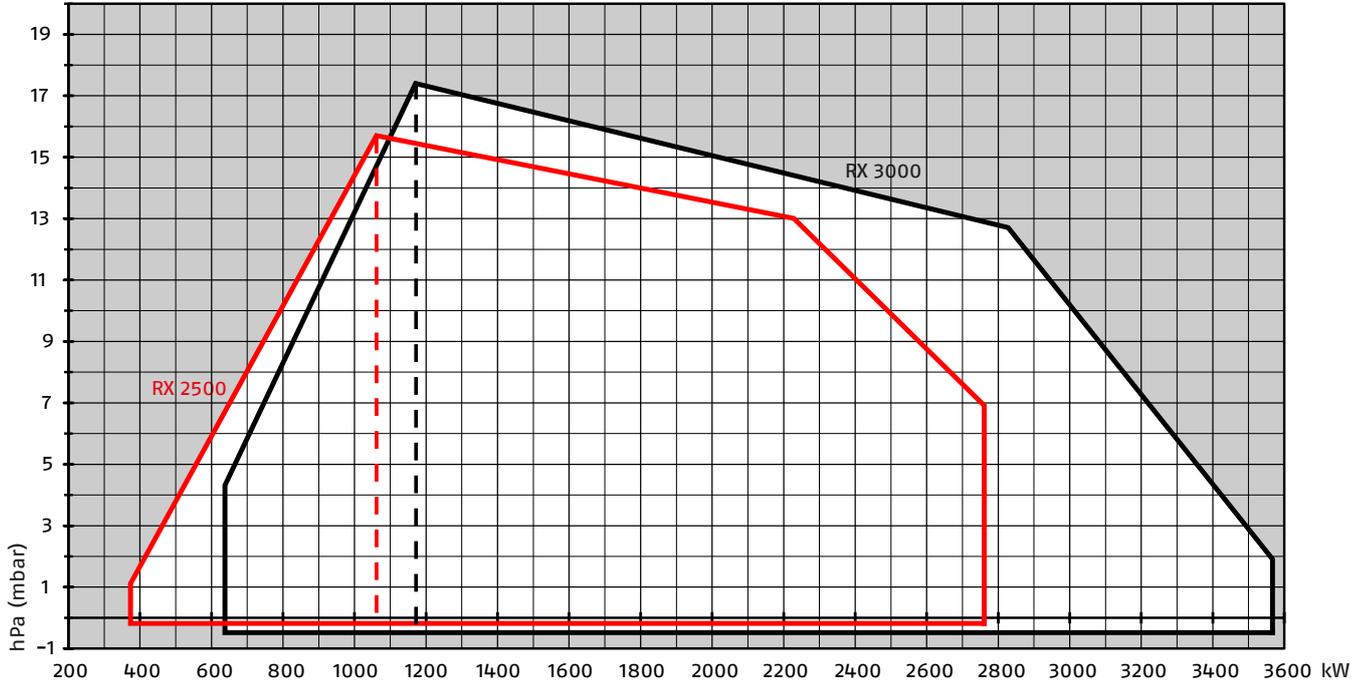
RX 1500÷3000 S/E ULN SERIES

FIRING RATES



Useful working field for choosing the burner

Test conditions conforming to EN676
 Temperature: 20°C
 Pressure: 1013,5 mbar
 Altitude: 0 m a.s.l.



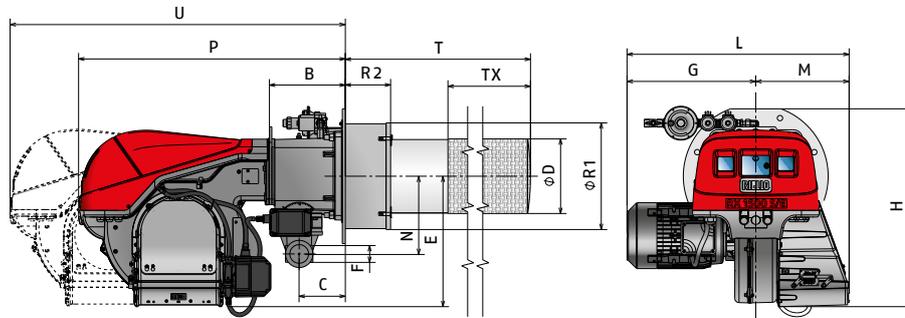
Please note: it is important to be aware that in order to achieve an ULTRA low NOx emission performance, it is required to work with a high excess air; as consequence the combustion chamber back pressure could increase up to roughly 30% more.

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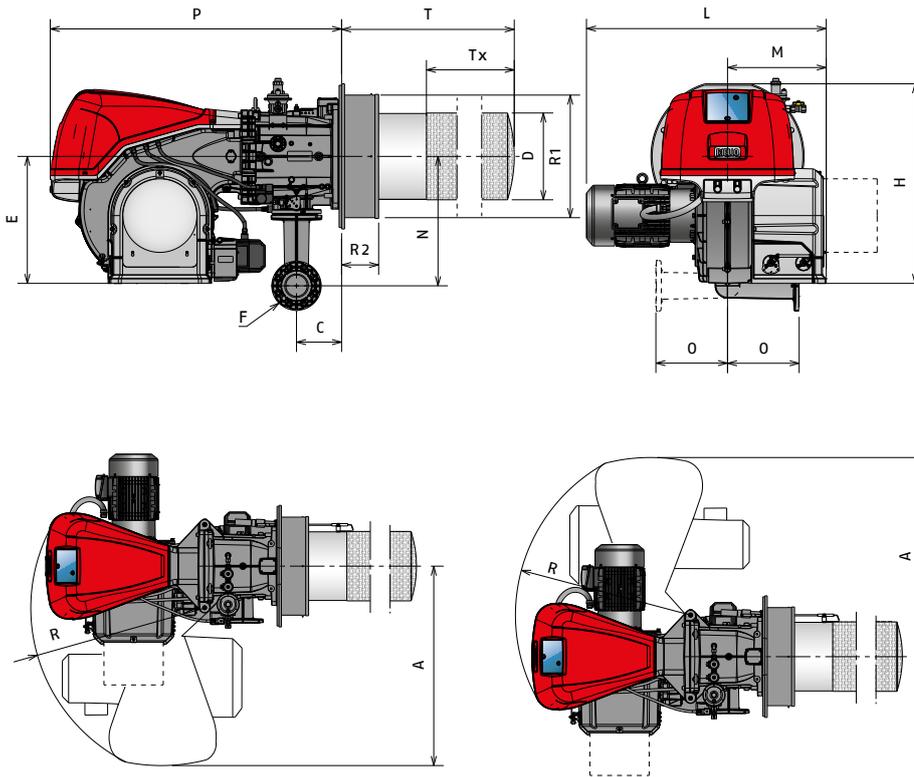
Overall dimensions (mm)

BURNER

RX 1500 S/E ULN



RX 1800-2500-3000 S/E ULN



MODEL	A	B	C	D	E	F	G	H	L	M	N	O	P	T	TX	U	R	R1	R2
▶ RX 1500 S/E ULN	-	250	154	250	440	2"	426	660	734	308	260	-	885	950	590	1060	-	360	150
▶ RX 1800 S/E ULN	1015	352	178	250	520	DN65*	-	790	830	606	400	290	1178	1080	720	-	890	506	150
▶ RX 2500 S/E ULN	1015	344	178	354	520	DN65*	-	790	878	400	400	290	1178	1200	840	-	890	506	150
▶ RX 3000 S/E ULN	1015	344	178	354	520	DN65*	-	790	970	606	400	290	1178	1530	1170	-	890	506	150

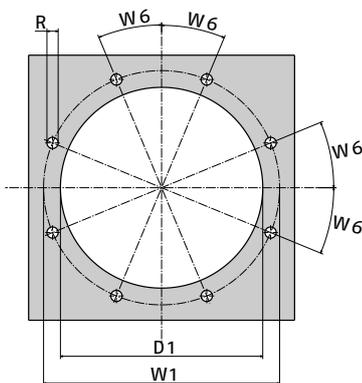
TX: flame zone length; the non combustion area (T-TX) must be greater than the thickness of the boiler door complete with refractory.
 * The gas adaptor is set also for DN 80 bore.

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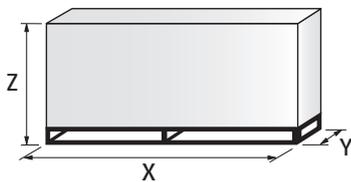
Overall dimensions (mm)

BURNER - BOILER MOUNTING FLANGE



MODEL	D1	W1	R	W6
▶ RX 1500 S/E ULN	370	470	M16	22.5°
▶ RX 1800 S/E ULN	520	560	M18	22.5°
▶ RX 2500 S/E ULN	520	560	M18	22.5°
▶ RX 3000 S/E ULN	520	560	M18	22.5°

PACKAGING



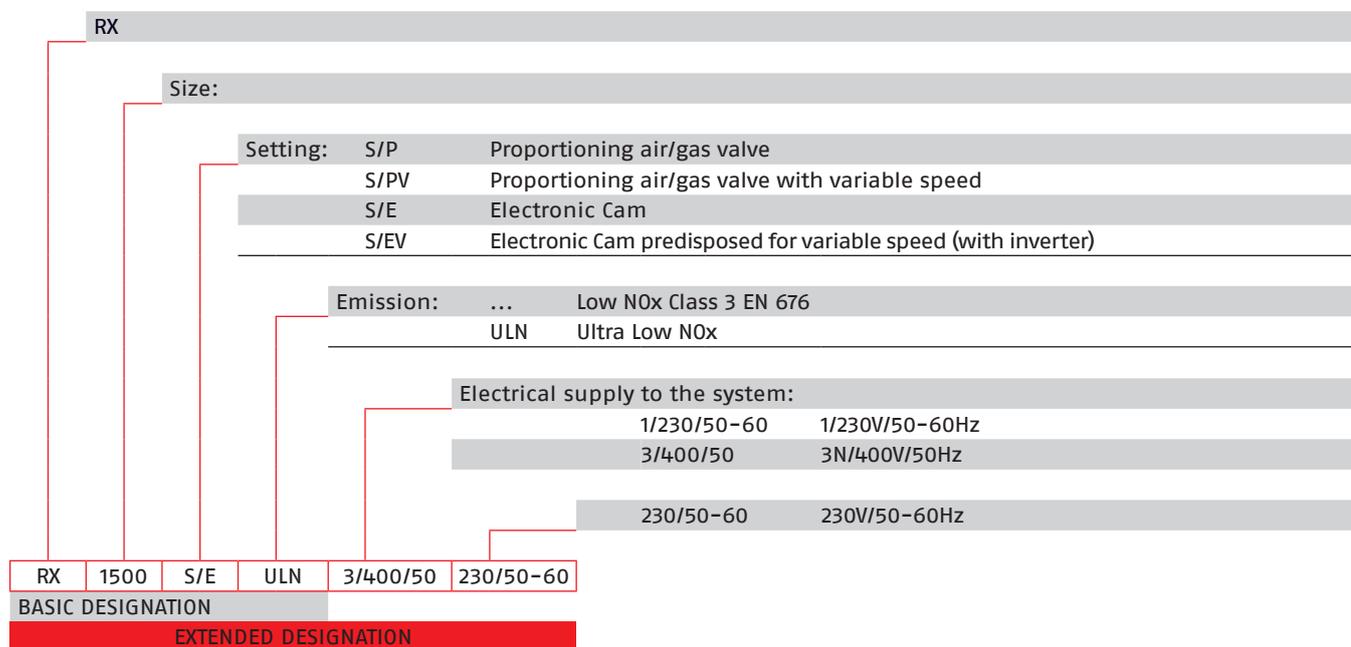
BURNER MODEL	X	Y	Z	kg
▶ RX 1500 S/E ULN	2510	1070	1300	130
▶ RX 1800 S/E ULN	1650	1260	950	200
▶ RX 2500 S/E ULN	1650	1260	950	220
▶ RX 3000 S/E ULN	1650	1260	950	220

COMB. HEAD MODEL	X	Y	Z	kg
▶ RX 1500 S/E ULN	Included in the burner box			
▶ RX 1800 S/E ULN	1310	650	800	80
▶ RX 2500 S/E ULN	1700	650	800	80
▶ RX 3000 S/E ULN	1700	650	800	100

RX 1500÷3000 S/E ULN SERIES

Specification

DESIGNATION OF SERIES



STATE OF SUPPLY

Monoblock forced draught Premix Ultra Low NOx gas burner with two stage progressive or modulating operation, with a specific kit, fully automatic, made up of:

- Cylindrical flame shape premix combustion heads fitted with:
 - highly heat resistant cylinder
 - special metallic fiber mesh resistant to thermal stress
 - ignition electrodes
- Double combustion control devices, made up of
 - temperature probe which controls the temperature inside the combustion head to prevent damage to the combustion head
 - UV flame sensor
- Pilot Ignition system to assure a high ignition reliability
- Microprocessor-based Digital Burner Management System
 - manages all the safety phases of the burner
 - allows to modify the operation point of the burner
 - with diagnostic functions for operational status and fault messages
- AZL display Interface, operating unit to adjust the system
- Fan with asynchronous motor
- Air suction circuit lined with sound-proofing material
- Air damper for air flow setting and butterfly valve for regulating fuel output controlled by independent stepper motor actuators
- Burner on/off selection switch
- Low gas pressure switch to cause controlled safety shut-down when the supply pressure falls below a pre-determined value
- Maximum gas pressure switch to stop the burner in the case of excess pressure on the fuel supply line
- Minimum air pressure switch stops the burner in case of insufficient air quantity at the combustion head
- No. 2 air pressure switches, light indicators, relays and fuses that set up the air intake filter (air filter is an accessory to be ordered separately)
- Relays with clean contacts for signaling the burner is operating or the burner's lock-out
- Fixing flange with insulating panel
- Flame inspection window
- Slide bars (RX 1500) or Hinge opening (RX 1800-2500-3000) for easier installation and maintenance
- Electric protection level IP44 RX 1500 – IP 54 RX 1800-2500-3000

Standard equipment:

- Insulating screen
- Gas train adapter
- Gas train for pilot ignition system for RX 1500 (installed on burner for RX 1800-2500-3000)
- Instruction booklet
- Spare parts list

Ultra Low NOx Modulating Premix Gas Burners

RX 1500-3000 S/E ULN SERIES

Available models

Burners

CODE	MODEL	COMBUSTION HEAD CODE (1)	HEAT OUTPUT NATURAL GAS		TOTAL ELECTRICAL POWER (kW)	CERTIFICATION	NOTE
			(kW) (2)	(kW) (3)			
20148878	RX 1500 S/E ULN 3/400/50 230/50-60	INCLUDED	270 - 1650	270 - 1830	6,65	CE-0085CT0448	(4)(5)(6)(7)(8)(9)
20148880	RX 1800 S/E ULN 3/400/50 230/50-60	20151520	300 - 1940	300 - 2155	5,56	CE-0085CT0448	(4)(5)(6)(7)(8)(9)
20148881	RX 2500 S/E ULN 3/400/50 230/50-60	20151274	375 - 2485	375 - 2765	6,65	CE-0085CT0448	(4)(5)(6)(7)(8)(9)
20148882	RX 3000 S/E ULN 3/400/50 230/50-60	20151483	640 - 3210	640 - 3560	8,50	CE-0085CT0448	(4)(5)(6)(7)(8)(9)

(1) For models RX 1800-2500-3000 S/E ULN, the combustion head is supplied separated from the burner and must be ordered with the specific code

(2) Power range referred to an Ultra Low NOx performance of 30 mg/Nm³

(3) Power range referred to a Low NOx performance conforming to the Class 3 of EN676 European Standard

(4) according to 2016/426/EU - 2014/35/EU - 2014/30/EU - 2006/42 EC Directive.

(5) Gas train must be ordered separately (please see Gas Trains paragraph)

(6) Seal control function is included on Burner Digital Management System, by connection to the dedicated pressure switch included as standard equipment on the gas train

(7) Direct starter fan motor

(8) Electrical connections with terminal board

(9) The burners cannot be used on inversion flame boilers

Gas Trains

BURNER MODEL	CODE	GAS TRAIN MODEL	Ø	ADAPTER	NOTE
RX 1500 S/E ULN	20129303	VGD 50/1	2"	(1)	(2)
RX 1800 S/E ULN					
RX 2500 S/E ULN	20126626	VGD 65/1	DN65	(1)	(2)
RX 3000 S/E ULN					

(1) The Burner/Gas Train adapter is included on burner as standard equipment

(2) The Gas train includes a gas pressure switch to be connected to the Burner's Digital Management System, to allow the seal control function

Ultra Low NOx Modulating Premix Gas Burners

RX 1500÷3000 S/E ULN SERIES

RIELLO

Burner accessories

Accessories for modulating operation

POWER CONTROLLER



To obtain modulating operation, the RX S/E series of burners requires a regulator with three point outlet controls. The following table lists the accessories for modulating operation with their application range. For remote setpoint use RWF 55.

BURNER	REGULATOR TYPE	REGULATOR CODE
▶ RX 1500 S/E ULN	RWF 50.2 - 3-point outlet	20099869
	RWF 55.5 - complete with RS-485 interface	20099905
▶ RX 1800-2500-3000 S/E ULN	RWF 50.2 - 3-point outlet	20085417
	RWF 55.5 - complete with RS-485 interface	20074441
	RWF 55.6 - complete with RS-485 profibus interface	20074442

PROBE



The relative temperature or pressure probes fitted to the regulator, must be chosen on the basis of the application.

BURNER	PROBE TYPE	RANGE (°C) (bar)	PROBE CODE
▶ All models	Temperature PT 100	-100 ÷ 500°C	3010110
	Pressure 4 ÷ 20 mA	0 ÷ 2,5 bar	3010213
	Pressure 4 ÷ 20 mA	0 ÷ 16 bar	3010214
	Pressure 4 ÷ 20 mA	0 ÷ 25 bar	3090873

PC Interface kit



To connect the control box to a personal computer for the transmission of operation, fault signals and detailed service information, an interface adapter with PC software are available.

BURNER	KIT CODE
▶ All models	3010436

OCI412 interface kit



Interface kit between the REC27.100A2 and a Modbus system, such as a building automation and control system (BACS). The Modbus interface is based on the RS-485 standard.

BURNER	KIT CODE (1)
▶ RX 1800-2500-3000 S/E ULN	3010437

(1) Not applicable on RX 1500 S/E ULN

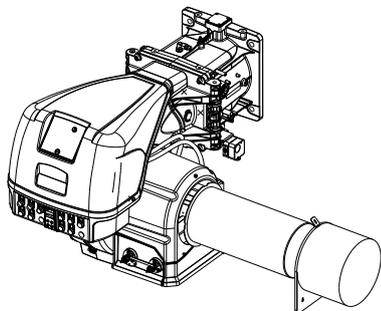
ULTRA LOW NOx
GAS

Ultra Low NOx Modulating Premix Gas Burners

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Burner accessories

Air filter



When burner is used in dusty environment, in order to prevent the possible ingress of foreign elements in the air circuit, a filter is available as accessory to be installed in the air intake side of the burner.

Because the RIELLO combustion head is made by mesh, and not fiber, the grade of filtration can be lower, allowing to lengthen filter cleaning time, so reducing cost and to fully exploit the potential of the ventilating structure, assuring in the meantime a correct combustion.

The Air Filter specifically studied for RIELLO RX S/E ULN burners is easily cleanable with compressed air in order to avoid the need to change it each time the maintenance is required.

The use of Air Filter involves a working field reduction, please refer to the instruction manual for detailed info.

BURNER	KIT CODE
▶ RX 1500 S/E ULN	20164652
▶ RX 1800-2500 S/E ULN	20156978
▶ RX 3000 S/E ULN	20141720

Continuous ventilation kit



If the burner requires continuous ventilation in the stages without flame, a special kit is available as given in the following table.

BURNER	KIT CODE
▶ RX 1500 S/E ULN	3010094
▶ RX 1800-2500-3000 S/E ULN	20074542