

# Data sheet

K-RHGBE



# SERIES K-RHGBE

Recuperative high-velocity burner with ceramic recuperator burner tube for the direct and indirect heating of industrial furnaces 9-100 kW



## Specifications & Advantages

- Cost-efficient high-velocity burner with integrated recuperator combustion tube for heat recovery
- Power scope from 9 to 100 kW
- Maximum application temperature up to 1300°C
- High efficiency
- Low-emission single-stage combustion
- Excellent temperature distribution due to high burner velocity
- Easy direct ignition at high-fire due to patented ignition system
- Particularly maintenance-friendly, modular set-up
- All media connections can be adjusted at 90° angles
- Direct flame monitoring to ensure maximum safety in all stages of operation
- Separate cooling air connection possible to enable the specific operation of temperature ramps

# SERIES K-RHGBE

## Technical specifications

Brennertyp K-RHGBE		15	30	50	100
Nominal thermal capacity [1]	kW	15	30	50	100
Nominal thermal capacity [1]	BTU/h	~51000	~102000	~171000	~341000
Minimum thermal capacity [1]	kW	9	15	25	50
Minimum thermal capacity [1]	BTU/h	~31000	~51000	~85000	~171000
Nominal gas connection pressure [2]	mbar	50	50	50	70
Nominal air connection pressure, indirect heating [2]	mbar	60	80	80	80
Nominal ejector air connection pressure, direct heating [2] [3]	mbar	n/a	80	90	110
Necessary volumetric ejector air flow [3]	Nm <sup>3</sup> /h	n/a	50	120	300
Maximum recuperator temperature	°C	1300	1300	1300	1300
Nominal diameter of recuperator	mm	63	100	125	150
Nominal diameter gas connection	DN	15	15	15	20
Nominal diameter combustion air connection	DN	20	25	40	40
Nominal diameter cooling air connection	DN	20	40	40	40
Nominal diameter ejector air connection	DN	25	25	50	80
Fuel gas [4]	NG, LNG, LPG				

Subject to technical modifications. [1] Values deviating from the burner capacity are possible upon request.

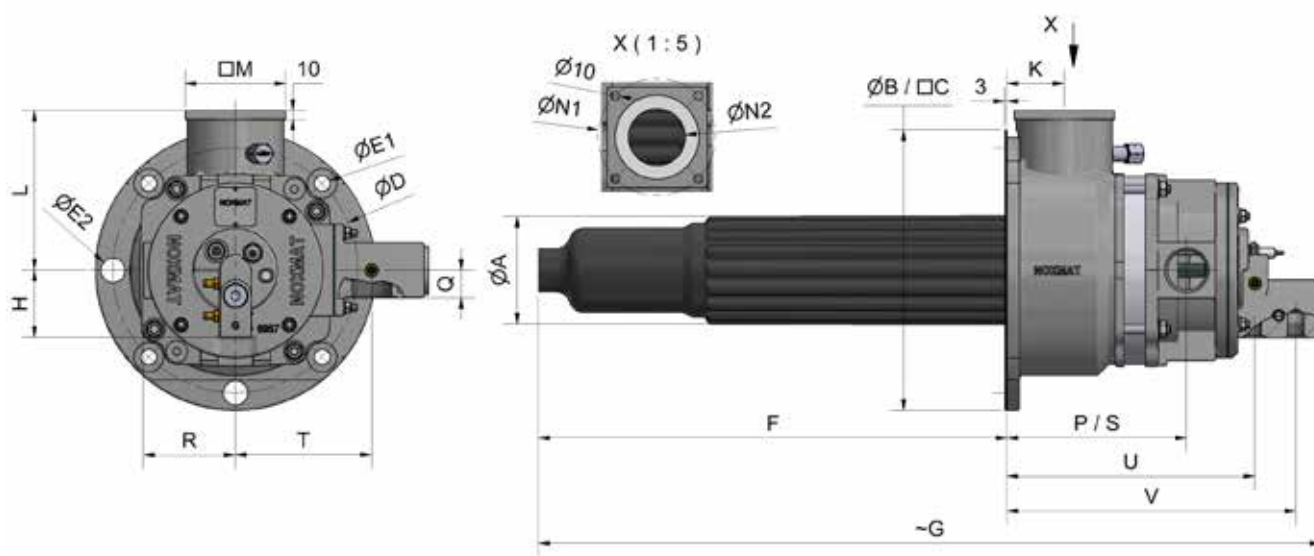
[2] Pressure fluctuations must not exceed +/- 5%; this also applies to the operation of the burners in groups.

[4] Reference values, based on a furnace temperature of 1200°C and 90% waste gas retraction at nominal burner capacity.

[5] Other combustion gases must be coordinated with Noxmat in advance.



## Principal dimensions / Basic burner

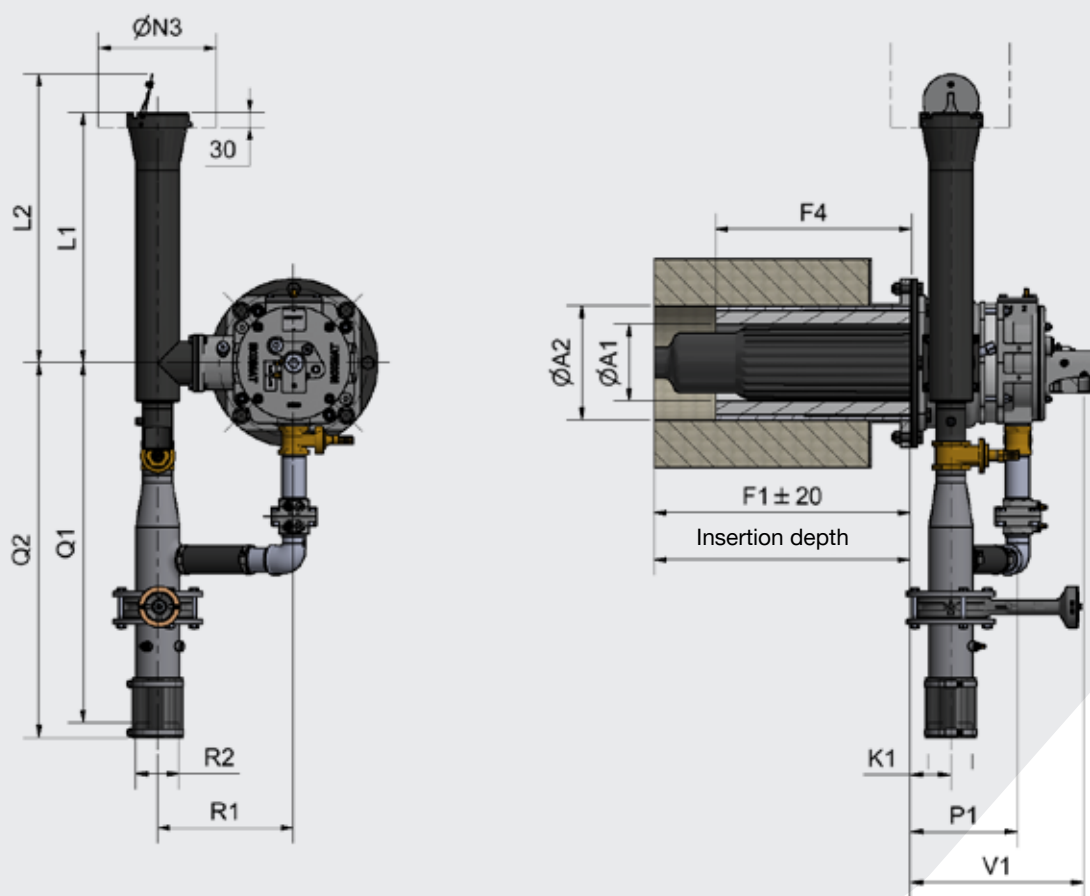


Burner size	Principal dimensions							
	A	B	C	D	E1/E2	F	G	H
	mm							
K-RHGBE 15	60	--	180	210	18/--	535	910	80
K-RHGBE 30	100	265	--	225	18/28	535	880	70
K-RHGBE 50	125	--	252	280	18/--	535	895	77
K-RHGBE 100	150	--	272	300	18/--	535	905	50

Burner size	Connection dimensions															
	Waste gas					Combustion air			Cooling air**				Purge air		Combustion gas	
	K	L	M	N1	N2	P	R	S	Q	T	U		V			
	mm					mm	inch	mm		inch	mm	inch	mm	inch		
K-RHGBE 15	60	130	96	110	35	185	125	G3/4	185	30	125	G3/4	259	G3/8	304	Rp1/2
K-RHGBE 30	65	150	104	120	50	197	135	G1	197	37	135	G1.1/2	274	G3/8	319	Rp1/2
K-RHGBE 50	65	180	115	134	65	205	158	G1.1/2	205	30	158	G1.1/2	283	G3/8	328	Rp1/2
K-RHGBE 100	65	190	115	134	75	200	180	G1.1/2	200	48	180	G1.1/2	279	G3/8	334	Rp3/4

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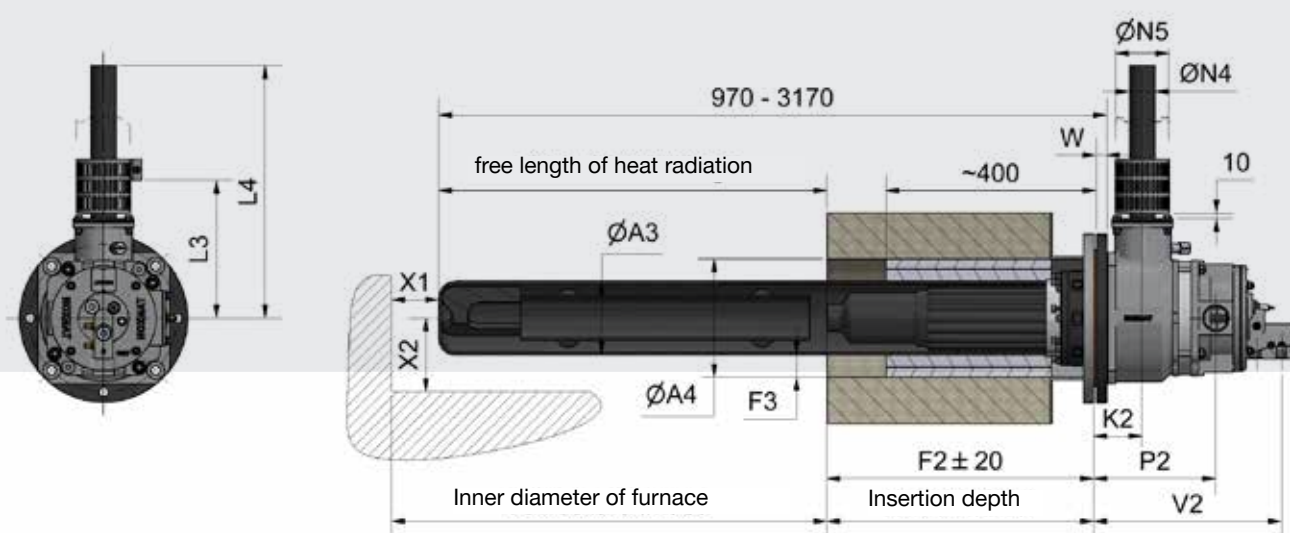
## Principal dimensions / Connecting dimensions Direct heating



Burner size	Principal dimensions				Connection dimensions									
					Waste gas				Combustion and Ejector air				Gas	
	A1	A2	F1	F4	K1	L1	L2	N3	P1	Q1	Q2	R1	R2	V1
mm				mm				mm				mm		
K-RHGBE 15	66	125	535	418	76	506	583	240	201	365±10	396	231	34	320
K-RHGBE 30	105	175	535	387	81	506	583	240	213	365±10	396	251	34	335
K-RHGBE 50	130	200	535	395	81	506	595	240	221	565±10	595	281	60	346
K-RHGBE 100	155	230	535	398	81	506	583	240	216	730±10	758	275	89	350



## Principal dimensions / Connecting dimensions Indirect heating

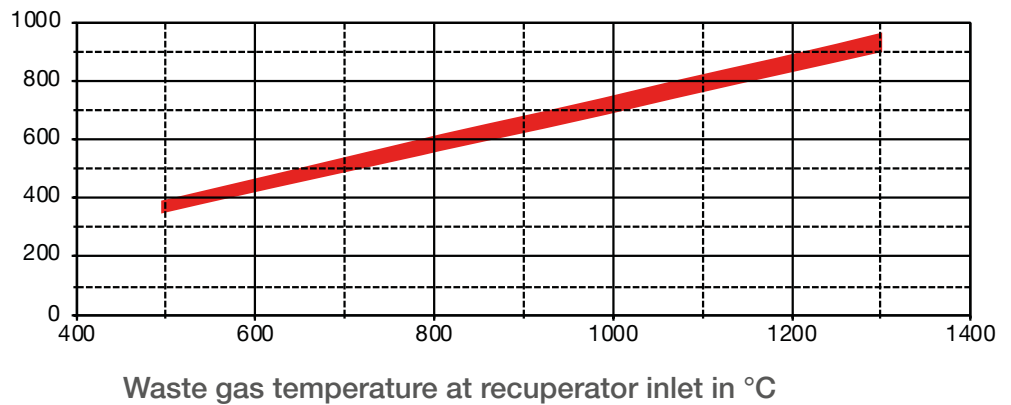


Burner size	Principal dimensions				Connection dimensions									
					Waste gas					CA	Gas	Jacket tube		
	A3	A4	F2	F3	K2	L3	L4	N4	N5	P2	V2	W	X1	X2
	mm				mm					mm	mm	mm	mm	mm
K-RHGBE 15	80	151	513	36	82	212	430	42	102	207	326	15	90	80
	100	160	513	30	82	212	430	42	102	207	326	15	90	100
K-RHGBE 30	115	175	513	31	87	232	450	42	102	219	341	15	90	115
	140	225	508	42	92	232	450	42	102	224	346	20	90	140
K-RHGBE 50	140	225	508	42	92	262	480	48	102	231	357	20	90	140
	165	250	508	43	92	262	480	48	102	231	357	20	105	165
K-RHGBE 100	165	250	508	43	92	262	480	60	102	227	361	20	105	165
	200	285	495	43	105	272	490	60	102	240	374	20	120	200

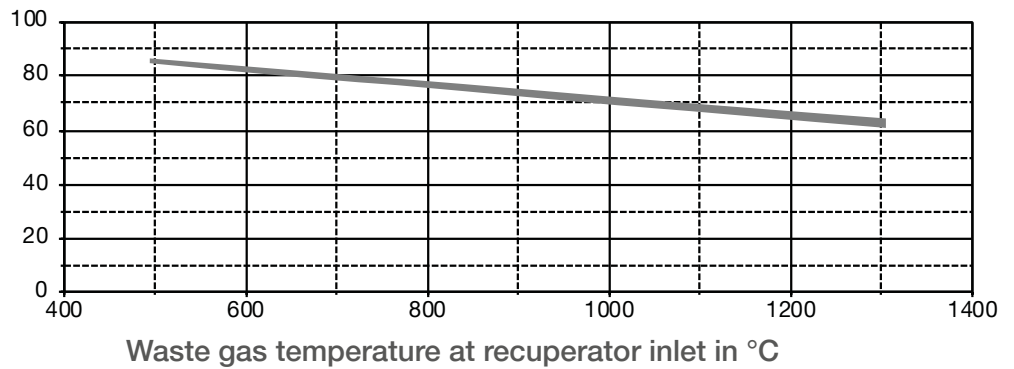
# TYPICAL PERFORMANCE CHARACTERISTICS

## K-RHGBE 15

Waste gas temperature at recuperator outlet in °C



Firing efficiency rate in %

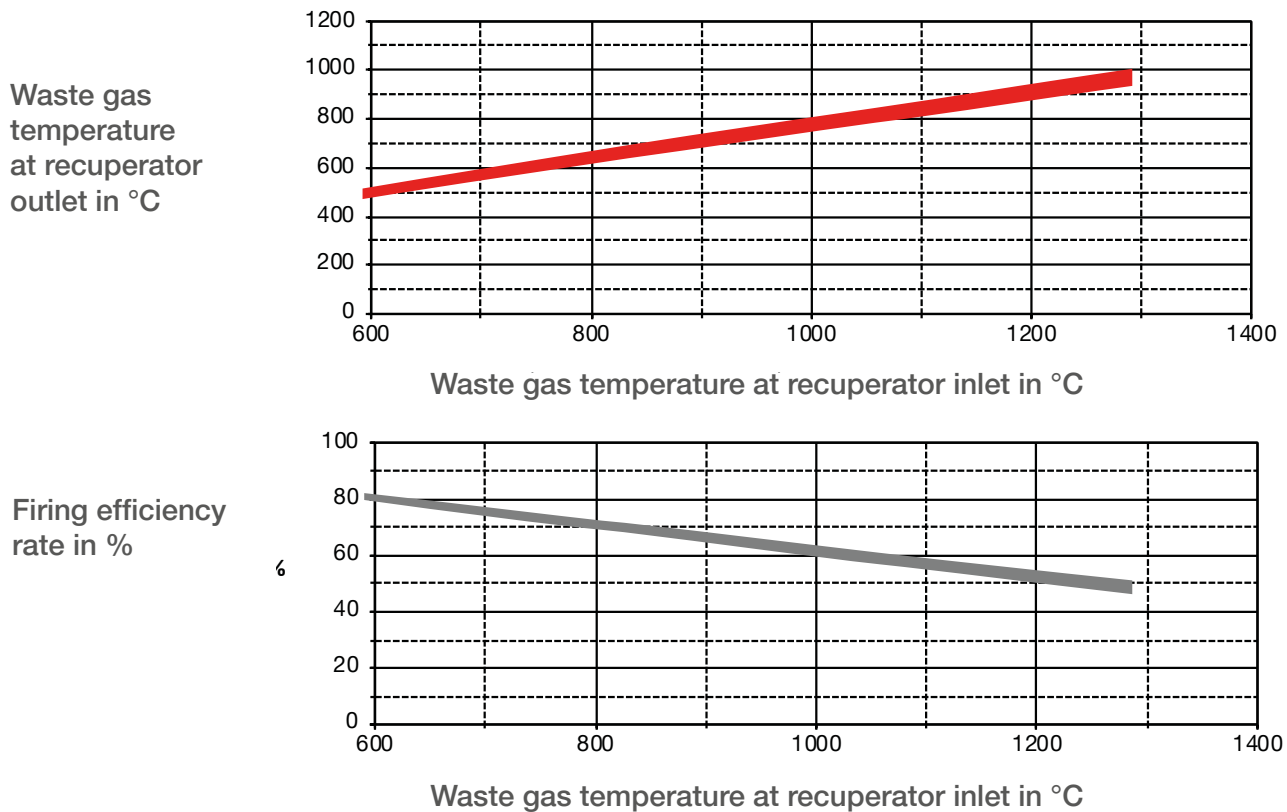


The above illustrations are valid for:

- indirect heating (with radiant tubes)
- direct heating with 100 % exhaust gas extraction
- continuous operation at nominal burner capacity
- natural gas
- $\lambda = 1,10 \dots 1,20$

The parameters specified shall be regarded as recommended ones. They are dependent on various factors that may vary in practice from the conditions specified above. Parameters for special conditions of use can be obtained from NOXMAT GmbH on request.

## K-RHGBE 30



The above illustrations are valid for:

- indirect heating (with radiant tubes)
- direct heating with 100 % exhaust gas extraction
- continuous operation at nominal burner capacity
- natural gas
- $\lambda = 1,10 \dots 1,20$

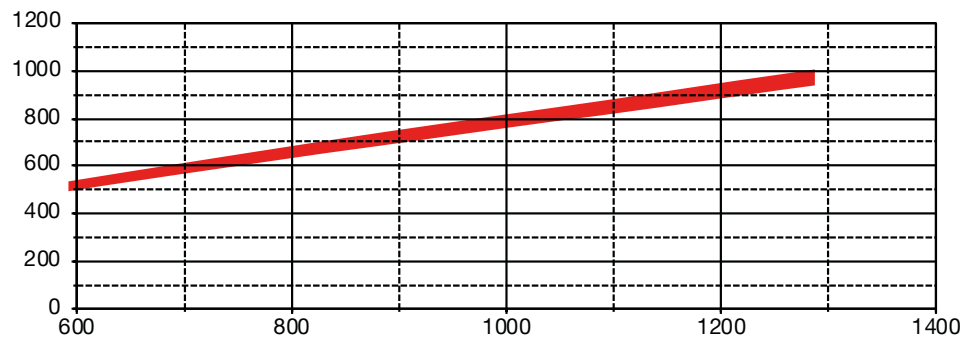
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# TYPICAL PERFORMANCE CHARACTERISTICS

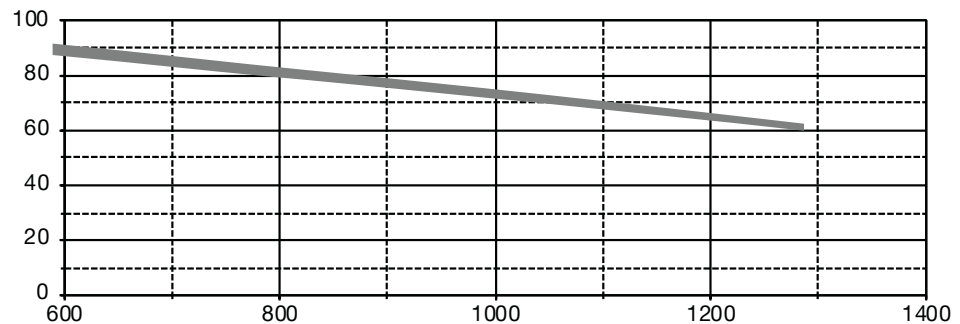
## K-RHGBE 50

Waste gas temperature at recuperator outlet in °C



Waste gas temperature at recuperator inlet in °C

Firing efficiency rate in %



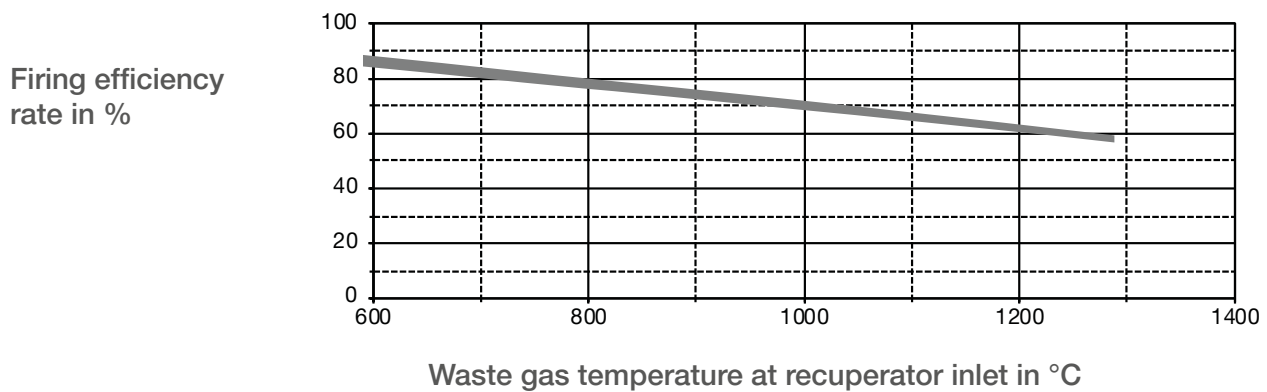
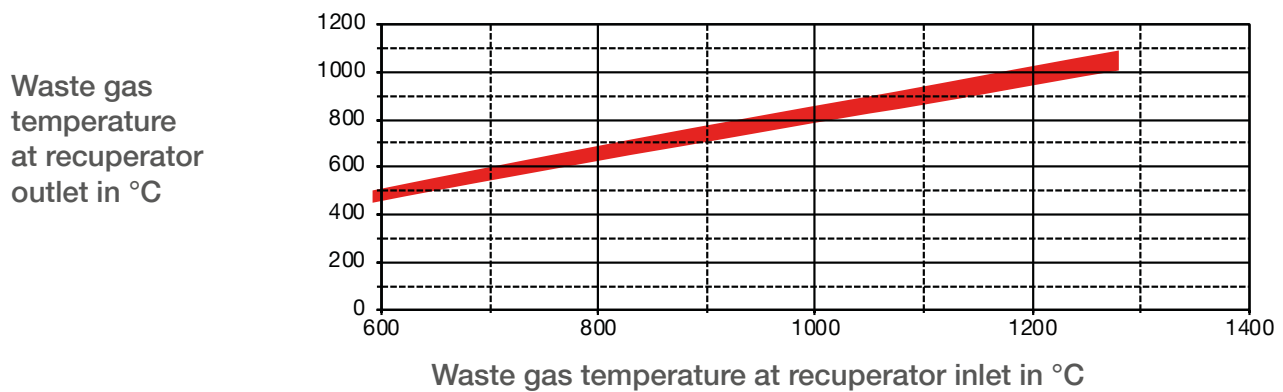
Waste gas temperature at recuperator inlet in °C

The above illustrations are valid for:

- indirect heating (with radiant tubes)
- direct heating with 100 % exhaust gas extraction
- continuous operation at nominal burner capacity
- natural gas
- $\lambda = 1,10 \dots 1,20$

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## K-RHGBE 100



The above illustrations are valid for:

- indirect heating (with radiant tubes)
- direct heating with 100 % exhaust gas extraction
- continuous operation at nominal burner capacity
- natural gas
- $\lambda = 1,10 \dots 1,20$

The parameters specified shall be regarded as recommended ones. They are dependent on various factors that may vary in practice from the conditions specified above. Parameters for special conditions of use can be obtained from NOXMAT GmbH on request.

# NOXMAT

combustion technology

## **NOXMAT GmbH**

Ringstraße 7, D-09569 Oederan

Phone: +49 37292 65 03 0

Fax: +49 37292 65 03 29

E-mail: [info@noxmat.de](mailto:info@noxmat.de)

[www.noxmat.com](http://www.noxmat.com)