A short introduction of PACKMAN modular gas burners:

RGB-M Series or RAADMAN Modular gas burners, covering a firing range from 160 to 32000 kW, are designed for a wide range of domestic and industrial applications. All RAADMAN modular burners are equipped with LAMTEC or SIEMENS electronic control system with capability of full air/gas ratio control throughout entire burner operating range. These burners have been tested and evaluated based on Iran national standard ISIRI-7595 (BS-EN 676). According to performed experiments, the values of CO even in low excess air operation is lower than 30 mg/kWh (In some cases, values close to zero have also been reported). The precise design of combustion head results a full gas-air mixture that guarantees high efficiency levels in all various applications. Burner superior design accompanied by high quality electronic devices have also resulted a further improvement in boiler's performance in order to decrease fuel cost and emissions.

RGB-M-505/LN (700-5100 kW)

RGB-M-505/LN is a Low NOx electronic modular gas burner with 1:7 modulating ratio designed for industrial boilers. The values of CO and NOx during burner operation are lower than 20 and 80 mg/kWh, respectively. Therefore, the burner's NOx class of III is reported and approved. Compact design with aluminum casing, silent operation, high adjustment ratio, independent air/gas actuator and low pollution are the most important advantages of this burner.
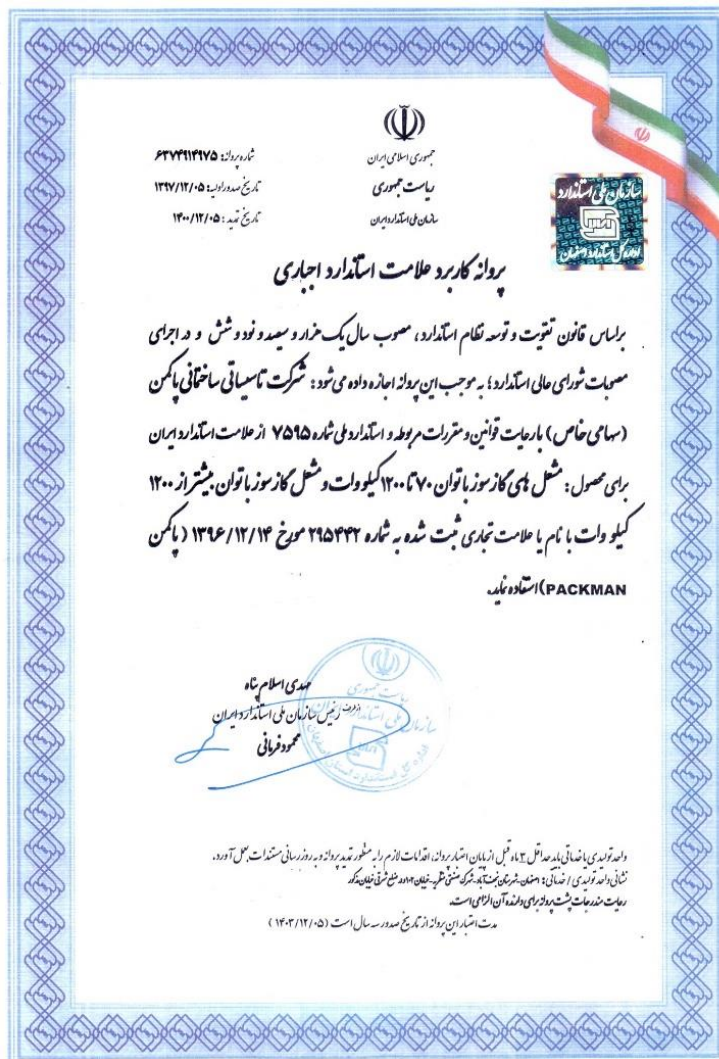
Burner Certificate

Figure 1 - Burner certification based on the Iran national standard ISIRI-7595, Equal to the BS-EN 676 international standard
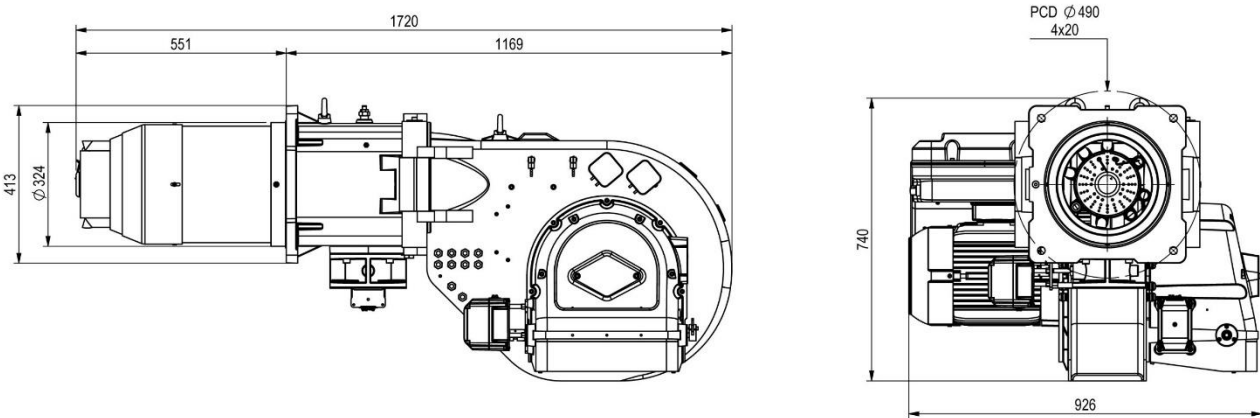

General Dimension
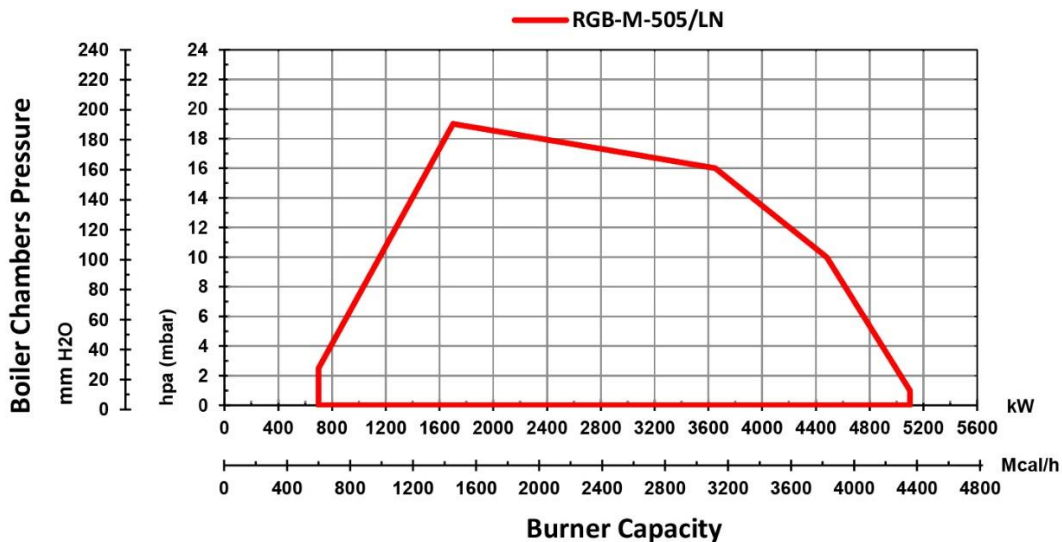

Figure 2 - Burner Dimensions

Firing Rate

Figure 3 - Burner Firing Diagram

👉 The firing rate diagram has been obtained considering ambient temperature of 20°C and atmospheric pressure of 1013 mbar (Sea level condition) according to the BS-EN 267 & BS-EN 676.

RGB-M-505/LN Technical and Functional Features

- Highly efficient gas burners for domestic and industrial applications.
- Light weight and optimized geometry.
- Mono-bloc design and fully enclosed aluminum air housing.
- Compatible with all types of combustion chambers according to EN303 standard.
- Simple Installation, adjustment and maintenance.
- Modular Operation.
- Easy access to internal components.
- Engineered for maximize efficiency and fuel cost savings.
- Designed in accordance with 7595 Iran national standard (EN676)
- Suitable for firetube, firebox and water tube boilers.
- High-quality, low-emissions burner with NOx class of 3.
- Equipped with high quality and reliable electronic devices.

Table 1 - RGB-M-505/LN Combustion Specification

Item	Description
Fuels:	Natural Gas
Gas capacity**:	700-5100 kW
operation:	Electronic modular system
Gas pollution:	III class of NOx according to BS-EN 676
Certificates: Certificate No:	ISIRI 7595 6374914975
Other abilities:	-Low excess air operation -Ability to run according to the Air/fuel ratio curve -Ability of Communication with external systems via Bus. -Independent ignition point position for safe burner start -Adjustable pre-purge and post purge time -Absence of joint clearance using linkage less actuators avoiding mechanical hysteresis -Easy commissioning using modular human interface -Parameter's indication -History of errors -Mono-bloc configuration -Silent operation (Due to the injected sound abortion material) -Including valve proving system -Ability of hinged opening of burner housing in both directions -High turn down ratio for avoiding any shut down in low required loads -Economical price using central burner controllers (With improved technology and ease of use, combustion plant is becoming even more economical as: NO additional burner controller is required, Less installation work with less errors, NO additional cost for valve proving, Taking less time for commissioning and service work) -Optional ability to install a variable speed drive for avoiding any impact in startup -Optional ability of running with O2 and CO sensors. -Optional ability of running with FGR in order to further reduction in NOx level

** Reference conditions: Ambient temperature 20°C - Gas temperature 15°C - Barometric pressure 1013 mbar - Altitude 0 m

Table 2 - Recommended Gas Train

Standard gas train: Separated items, DN 65, 360 mbar			
Item	QTY	Specification	Brand*
MVD 2065/5 (Safety valve)	1	Solenoid valve, Single stage gas valve, Fast opening fast closing, Max operating pressure= 200 mbar , DN 65	DUNGS
MVDLE 2065/5 (Main valve)	1	Solenoid valve, Single stage gas valve, Slow opening fast closing, Max Operating Pressure= 200 mbar, DN65	DUNGS
FRS 5065	1	Gas regulator, Max operating pressure=500 mbar,	DUNGS

		DN 65	
GF 40065/4	1	Gas filter, Max operating pressure= 4 bar, DN 65	DUNGS
GW 150 A6	2	Gas pressure switch, Range : 5-150 mbar - with plug	DUNGS
GW 500 A6		Gas pressure switch, Range : 100-500 mbar - with plug	DUNGS
Pressure indicator	1	Range : 0-600 mbar, Rp 1/2	
Pressure indicator	1	Range : 0-400 mbar, Rp 1/2	
Push button valve	2	Rp 1/2	
Collector	1	DN 65 - DN 65	

* Though these brands are common in this type of burner, they would may change based on available components in the market (such as MADAS, SIEMENS, etc.) or according to the policy of Packman Co.

Table 3 - Burner Equipment and Accessories

Power System		
Item	Specification	Brand*
Main motor	11 kW, 3 Phase, B5, 380-400 Volt, 50 Hz, 2900 rpm	ELECTROGEN
Bi-metal	LRD16	SCHNEIDER
Contactor	LC1D25, LC1D32	SCHNEIDER
Star-Delta Timing Relay	RE22R1QCMU	SCHNEIDER
Selector switches	XB4 BD21	SCHNEIDER
Burner Management System		
Item	Specification	Brand*
Burner Tronic BT320 (Main controller)	Up to 2 actuators, intermittent operation only, 230 VAC	LAMTEC
Manual interface	UI300 - User Interface with graphic display, in panel installation housing "standard" housing color RAL7016 incl. connecting cable, IP41	LAMTEC
Air actuator	Servomotor 9 N.M protection class IP54, 90° actuating range, 0.1° resolution/step, metal gearbox, cable length 1.5 m	LAMTEC
Gas actuator	Servomotor 1.2 N.M protection class IP54, 90° actuating range, 0.1° resolution/step, metal gearbox, cable length 1.5 m	LAMTEC
load controller	LCM100 - load control unit expansion module incl. LSB interface and 24V power supply, Connecting cable BT300 X31	LAMTEC
Ignition System		
Item	Specification	Brand*
Transformer	Tra.f.a.n union single wire	TRAFO
Other Components		
Item	Specification	Brand*
Air pressure switch (Min	LGW 10 A2, 1-10 mbar	DUNGS

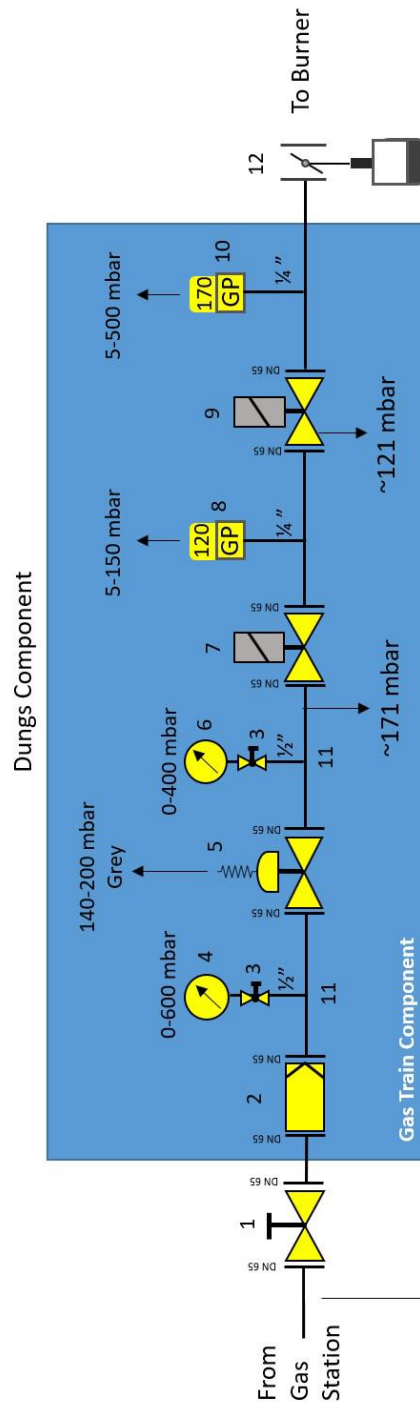 www.raadmanburner.com

Switch)		
Boiler chamber pressure switch (Max Switch)	LGW 50 A2, 2.5-50 mbar	DUNGS

* Though these brands are common in this type of burner, they would may change based on available components in the market or according to the policy of Packman Co.

Burner Model: RGB-M-505/LN - Output : 700 – 5100 kW
Gas consumption (G20) : 510 m3/h - General Pipe size : DN 65

Figure 4 - Standard gas train: Separated items, DN 65, 360 mbar

Inlet pressure : 230-360 mbar
General pipe size: DN 65

1: Ball valve
2: Gas filter
3: Push button valve
4: Pressure gauge/(0-600 mbar)

5: Pressure regulator (FRS)
6: Pressure gauge/(0-400 mbar)
7: Safety gas valve
8: Min/Leak test gas pressure switch

9: Main gas valve
10: Max gas pressure switch
11: Collector
12: Butterfly valve

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