



Greenhouse



Mr. Jabbari's greenhouse
Strawberry cultivation
Orumiyeh
devices, 2012 26



Samangani's greenhouse
Kalat
90 devices, 2014

IRAN MASH'AL Co was founded as executive of great projects of public & industrial buildings in 1982. This company with credit of 30 years of experience took action to import manufacturing technology of radiant heating devices with cooperation of AMBIRAD UK company under the registered name of "GARMATAAB". IRAN MASH'AL Co founded an equipped lab in the location of its factory and succeeded .to achieve different certificates including Iran's National Standard of product Supply heating of area of over 5 millions m2 in more than 4500 projects in different spaces using GARMATAAB heaters and also product export to various countries prove the commitment of company directors to maintain and enhance customer .satisfaction

جمهوری اسلامی ایران
وزارت صنایع و معادن ایران

پروانه بهره‌برداری

۸۱/۱۲/۲۵	تاریخ بهره‌برداری
۸۹۵۶	شماره سابقه ثبت
۶۳۱۹۴۱۵	شماره پروانه بهره‌برداری

۱۳۸۱/۱۲/۲۷

آقای / خانم **ایران مشعل** **شرکت**

با توجه به راه‌اندازی و دستیابی آن واحد به انجام عملیات تولید انبوه، این پروانه جهت تولید محصولات زیر و به منظور استفاده از مزایای قانونی آن اعطاء می‌گردد.

محصولات اصلی	تاریخیت سالانه	واحد	تعداد شیفت	شماره شناسایی کالا
۱- دستگاه گرم کننده	۱۱۵۰۰	دستگاه	یک شیفت	۲۹۱۹۱۵۲۱
۲- ششمنی سانی	میزد ه هزا روپایانند			

۳-
۴-
۵-
۶- محصولات جانبی

اموالیل احمدیه
رئیس سازمان صنایع و معادن استان سمنان

تذکرات:
وزارت صنایع و معادن هیچگونه تعهدی در قبال تامین منابع مالی، اعم از انرژی و ردایی و مواد اولیه نخواهد داشت.
ه توجه دارنده این پروانه را به معاد متذکر در نظر این پروانه چاه می‌باشد.
ترسیمات لازم در پشت پروانه درج شده است.

جمهوری اسلامی ایران
وزارت صنایع و معادن
سازمان صنایع و معادن استان سمنان

شرکت ایران مشعل
سلام علیکم

احتراماً "عطف به نامه شماره ۸۶/۴۲۲۸ مورخ ۸۶/۵/۲۱ بدین وسیله به آگاهی میرساند درحال حاضر و براساس اطلاعات موجود دربانک اطلاعات سازمان آتشکرت تنها تولید کننده دستگاه گرم کننده تشعشی می باشد.

علی نظری
رئیس سازمان

آدرس: سمنان، میدان معلم، مجتمع اداری، کدپستی: ۳۵۱۸۸-۳۳۴۷۵، تلفن: ۴۴۲۱۱۰-۴۴۲۱۱۱، فکس: ۴۴۲۱۱۲
آدرس الکترونیکی: INFO@IMO-SEMANAN.IR وب سایت: WWW.IMO-SEMANAN.IR



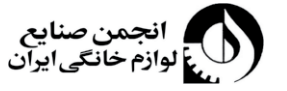
Iranian Syndicate
of Industrial
Companies



Member of
Association of Iranian
Industries Industry



ISO17025 lab
accreditation
certificate



Association of
Industries of
Household Appliances
of Iran



**Only holder
of radiant heater
standard certificate
736816696**

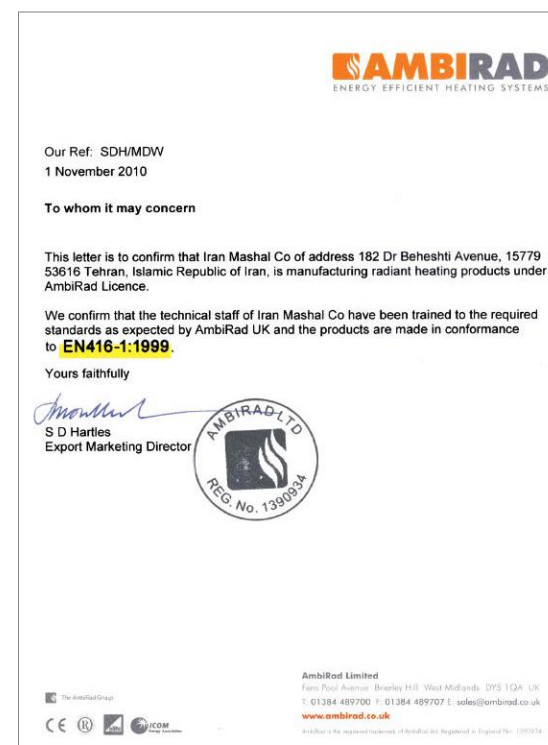
First & only holder of standard certificate of gas-fired radiant heating systems issued by Iranian National Standard Organization



Standard of GARMATAAB product

Due to special importance of safety & performance of gas-fired devices, Iranian National standard Organization compiled "single burner gas-fired overhead radiant tube heaters for non-domestic use" standard with NO.12871-1 based on "BS EN 416-1;1999" reference in 2010

IRAN MASH'AL Co took action to found and equip Research Laboratory of Radiant Heating Systems by spending so much effort & cost for proving conformity assessment of its product based on mentioned standard



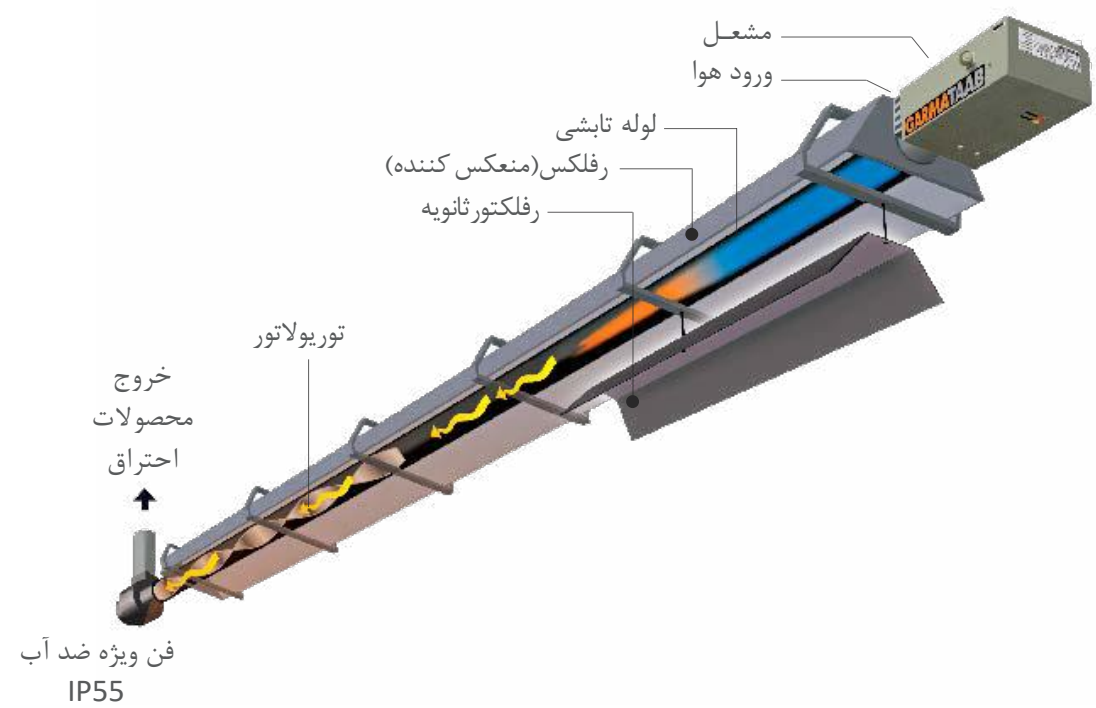
Test & Research Lab of
IRAN MASH'AL Co has been
implemented based on ISO17025
standard and succeeded to accredit
by National Accreditation center
of Iran NACI

Conformity assessment of product based on "BS EN 416-1:1999" & under license
certificate issued by AMBIRAD Co

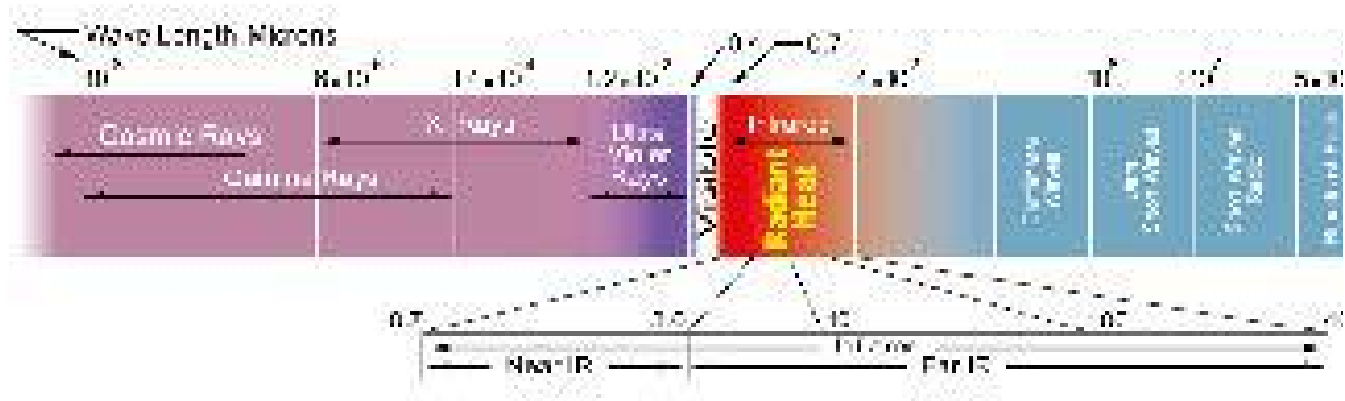
Certificate issued by standard
administration of Tehran
Province of IRAN as first & only
collaborative lab

**Please consider necessity of safety & performance standard certificate
in gas-fired devices**

In this heater, natural gas burns by a specific burner with long flame in a tube with high radiation factor. The generated heat is transformed into infrared waves and is radiated to the specified places by trapezoidal reflector surfaces located above the device. In contact with surface, these waves are transformed into heat due to their properties and create very pleasant sensation in human like heat of the sun.



Electromagnetic spectrum



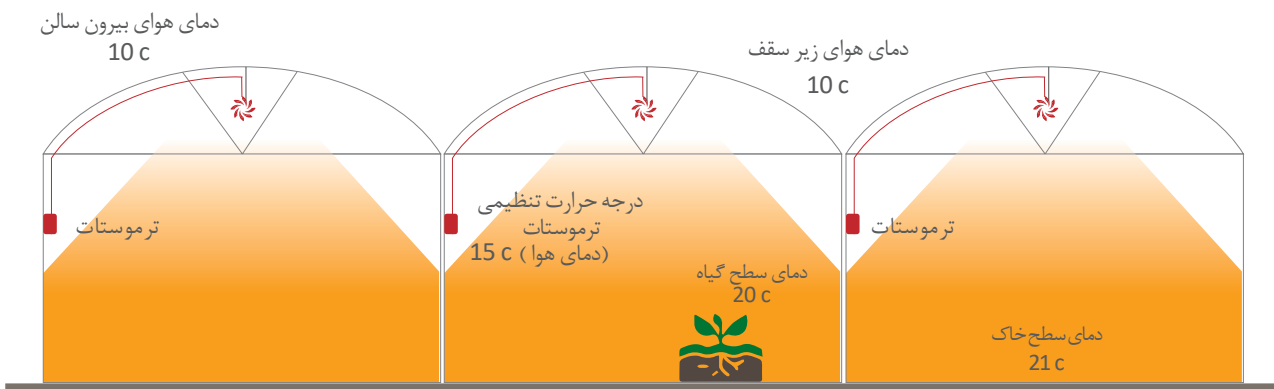
Kentiya greenhouse
Velenjak, Tehran

Selection of a suitable heating system:

In order to select a suitable heating system in t, 4 important & key factors should be considered as following:

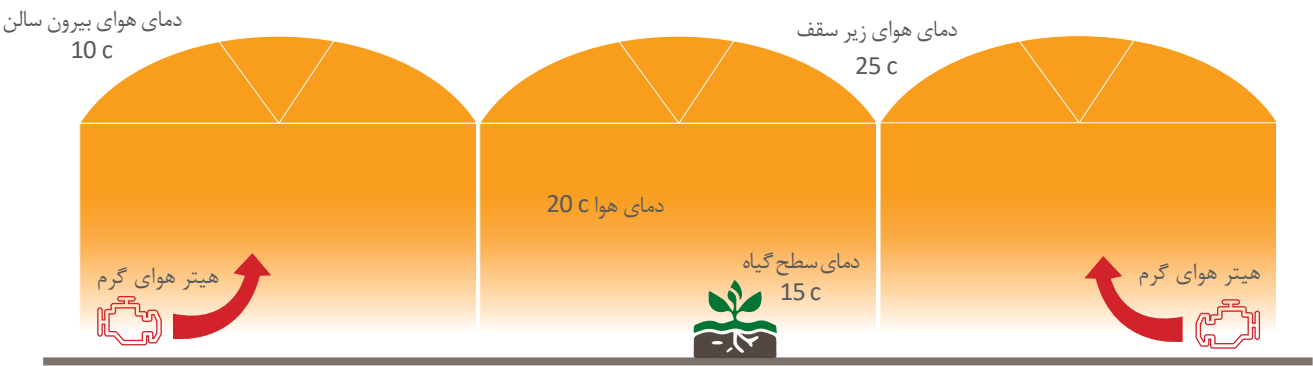
- 1) Fully uniform heating in whole area of greenhouse (supply heating of plant root in greenhouse)
- 2) Optimal consumption of fuel & electricity (due to the ever increasing in the price of energy carriers)
- 3) Long life & low maintenance costs
- 4) Economical initial investment

Radiation heating



In radiant heating method, temperature below ceiling doesn't increase so much and heat loss from ceiling is low and fuel consumption significantly reduces. The device creates desirable heating like heat of the sun in the greenhouse and in this condition, soil surface temperature & plant surface is slightly more than greenhouse air temperature due to the thermostat connected to each device. Finally, this issue leads to no dew formation on plant surface and as a result, the diseases transmitted due to humidity of plant surface or air circulation decreases.

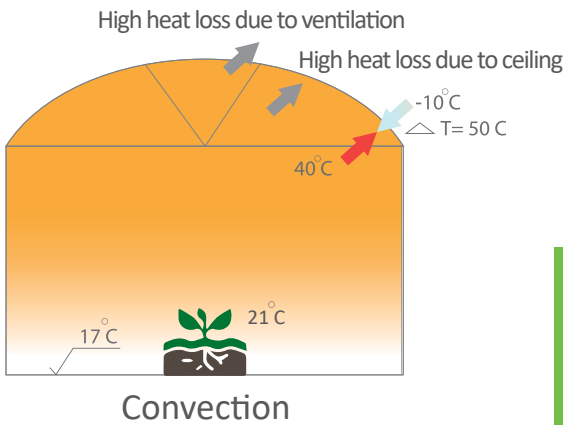
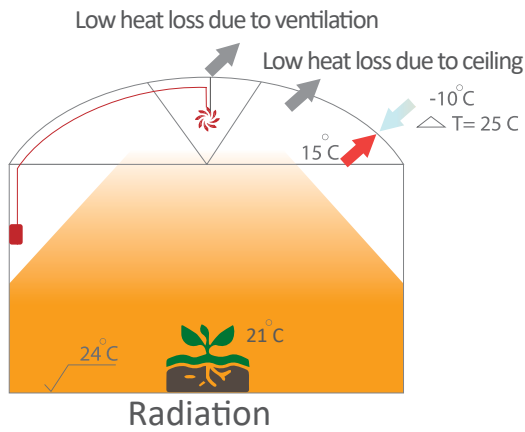
Hot air heating



In hot air heating method, temperature below ceiling significantly increases and leads to exchange heat with outdoor air and increases heat loss. In this method, temperature of plant surface is lower than greenhouse air temperature and leads to dew formation on plant surface. Also, more temperature variation between air below ceiling & outdoor air leads to the formation of water drops below ceiling and their falling on the plant. In this method, soil temperature doesn't be provided ideally.

Why is GARMATAAB the best option?

Nowadays, supply heating by using methods like central heating equipped with steam, hot & warm water, burner & unit heater or space heaters is not suitable & economical in long-height spaces. In these methods, major amount of energy is transferred below ceiling of building due to low density of hot air. Despite high consumption of energy, only low amount of consumed energy heats the space. By inventing radiant heating system in past decades, high percentage of combustion energy is transferred to the surfaces in the mode of radiation without air interference. Great advantages of radiant heaters for supply heating of large spaces provide desirable, optimal & fast heating with uniform distribution of temperature in addition to decreasing initial investment & high energy saving of fuel & electricity



Comparison of heaters cost

	Central heating	GARMATAAB®	Saving percentage
Cost of design	100	0	100
Equipments	Boilers, burners, piping, heaters(unit heaters), pumps, valves, controllers, insulators, pipe ducts, electrical panels	Devices & gas piping	
	100	40 to 60	40 to 60
Cost of implementation	100	10	90
Maintenance	100	5	95
Consumed fuel	100	40 to 60	40 to 60
Consumed electricity	100	10	90
Consumed water			

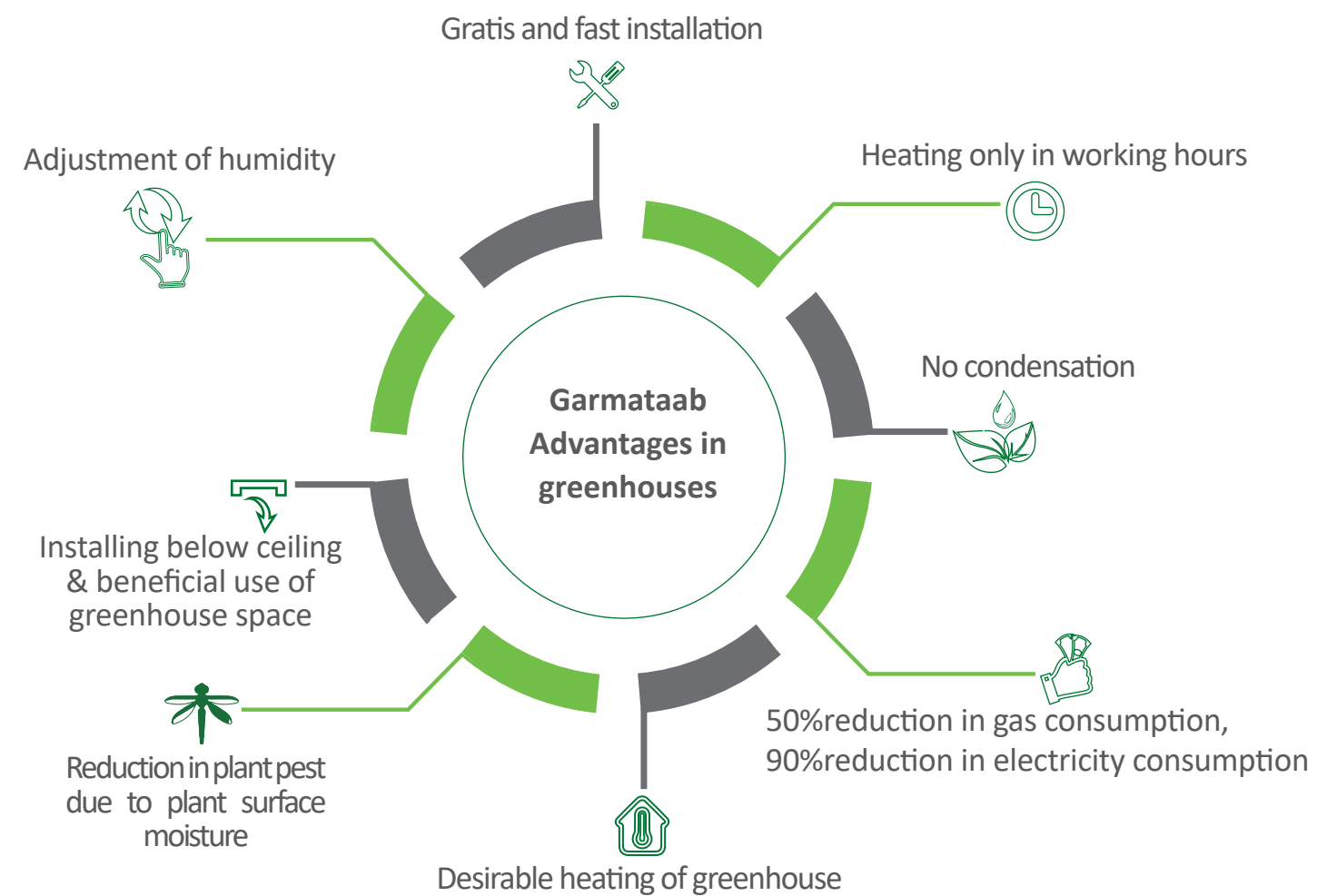
Technical specification of SL type of

Mounting heights (m)	Overall width (cm)	Overall length (m)	Electrical supply (w)	Max natural gas consumption (pressure 17.8 mbar) (m3/hr)	Heat capacity Kcal/hr	Model
4-3	46	12/70	80	3/8	34.400	AR40SL
4-3	46	15/15	100	4/7	45000	AR50SL



- SL type of GARMATAAB
- With long length
- For heating of short-height spaces

Garmataab Advantages in greenhouses



مشعل گازسوز و فن دستگاه گرماتاب مخصوص گلخانه



In case of high humidity, it's possible to provide burner & fan boxes made of steel.



Special fan with electromotor protected against heat & humidity (IP55) with Italian RPM electromotor (suitable for high-humidity places)



Temperature of plant surface in radiation heating



Mr. Ali Zarei's greenhouse

Pakdasht, Varamin

16 devices, 2009



۴۸	تعداد گرماتاب	۴۸۶	مساحت هر سالن (طول و عرض)
AR40SL	مدل دستگاه	۱۲	تعداد دهانه
۳۴۴۰۰ kcal/h	ظرفیت حرارتی دستگاه	۵/۴	ارتفاع تاج سالن
۱۵- C	سردترین دمای محیط	۵/۳	ارتفاع نصب از کف

Kasir-o-safar's greenhouse
Rose flower
Kalat
48 devices, 2014-2018



Mrs. Kasir-o-safar's greenhouse
Cactus cultivation
Mashhad
18 devices, 2015



Working in the same ,way as the sun

Mrs. Moradi's greenhouse
Cucumber cultivation
Hamadan
16 devices, 2010



Jabbari's greenhouse
Tuberose-Bird of paradise
Toos
9 devices, 2015-2016



Mr. hasanpour's greenhouse
Mashhad
15 devices, 2014



Samangani's greenhouse
Rose flower
Kalat
90 devices, 2014



Bakhshi's greenhouse
Cultivation of rose flower
Toos
46 devices, 2015



Mr. Ramezan Zarei's greenhouse

Varamin

22 devices, 2007



Mr. Ali Zarei's greenhouse
Pakdasht, Varamin
Gerbera flower
18 devices, 2010



Mr. Nikdel's greenhouse

Rose flower

Ghoochan

26 devices, 2014



Mr. Yad-o-allah Taheri's greenhouse
Mahallat
30 devices, 2011



15 years customer
service

3

3 years warranty

10

10 years warranty of radiant tubes



Gratis visit & installation

IRAN MASHAL

environment engineering co.

First manufacturer of radiant heater &
only holder of national standard certificate
based on ISIRI 12871-1 in IRAN under the
registered name of GARMATAAB

GARMATAAB®



+98 21 88529566



+98 21 88752037



16 36 95 77 15



www.garmataab.com



Fajr industrial zone, Garmsar, IRAN



No.182, Dr beheshti street, Tehran, IRAN