

AG1 Series - Tube Heater Specification Sheet

▲ WARNING: This heater must be installed and serviced by trained gas installation and service personnel only! Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment. Protect yourself and others by observing all safety information. Retain instructions for future reference.



AG1 SERIES TUBE HEATERS

ENGINEERING SUBMITTAL DATA - SINGLE STAGE LOW INTENSITY
GAS FIRED INFRA-RED TUBE HEATERS & ACCESSORIES.

Qty.	Model #	Gas Type (circle one)	BTU's	Length	Weight - Pcs.	Suggested Height Above Animals	Qty. Alum. Add On*	Field use only	
								"Type" Tube Pkg #1 **	"Type" Tube Pkg. #2 **
	AG1-20-50	N or LP	50,000	21'-7"	120 # - 2	6' - 9'	Qty. 1	20-4 Alum-HRT	N/A
	AG1-20-60	N or LP	60,000	21'-7"	120 # - 2	6' - 9'	Qty. 1	20-4 Alum-HRT	N/A
	AG1-20-75	N or LP	75,000	21'-7"	120 # - 2	6' - 9'	Qty. 1	20-4 Alum-HRT	N/A
	AG1-30-50	N or LP	50,000	31'-3"	160 # - 2	7' - 10'	Qty. 2	30-4 Alum-HRT	N/A
	AG1-30-60	N or LP	60,000	31'-3"	160 # - 2	7' - 10'	Qty. 2	30-4 Alum-HRT	N/A
	AG1-30-75	N or LP	75,000	31'-3"	160 # - 2	7' - 10'	Qty. 2	30-4 Alum-HRT	N/A
	AG1-30-100	N or LP	100,000	31'-3"	160 # - 2	8' - 14'	Qty. 2	30-4 Alum-HRT	N/A
	AG1-40-50	N or LP	50,000	40'-11"	190 # - 2	7' - 10'	Qty. 3	40-4 Alum-HRT	N/A
	AG1-40-60	N or LP	60,000	40'-11"	190 # - 2	7' - 10'	Qty. 3	40-4 Alum-HRT	N/A
	AG1-40-75	N or LP	75,000	40'-11"	190 # - 2	7' - 10'	Qty. 3	40-4 Alum-HRT	N/A
	AG1-40-100	N or LP	100,000	40'-11"	190 # - 2	7' - 11'	Qty. 3	40-4 Alum-HRT	N/A
	AG1-40-125	N or LP	125,000	40'-11"	190 # - 2	9' - 14'	Qty. 3	40-4 Alum-HRT	N/A
	AG1-40-150	N or LP	150,000	40'-11"	190 # - 2	10' - 14'	Qty. 3	40-4 Titan-HRT	N/A
	AG1-50-100	N or LP	100,000	50'-7"	235 # - 2	8' - 11'	Qty. 4	40-4 Alum-HRT	10-4-HRT
	AG1-50-125	N or LP	125,000	50'-7"	235 # - 2	9' - 14'	Qty. 4	40-4 Alum-HRT	10-4-HRT
	AG1-50-150	N or LP	150,000	50'-7"	235 # - 2	10' - 14'	Qty. 4	40-4 Titan-HRT	10-4-HRT
	AG1-60-125	N or LP	125,000	60'-3"	270# - 3	9' - 14'	Qty. 5	40-4 Alum-HRT	20-4-HRT
	AG1-60-150	N or LP	150,000	60'-3"	270 # - 3	10' - 14'	Qty. 5	40-4 Titan-HRT	20-4-HRT

* The ALUM-AO option will upgrade any hot rolled steel tube to coated aluminized steel.

The ALUM-AO is highly recommended in any harsh or high moisture environment. It is required in some confinement applications.

** Type packages refer to the tube package that will ship with models (length, diameter, combustion tube type and radiant tube).

N/A This model is not available with this feature.

Project: _____ Date: _____

Customer Name: _____

Location: _____

City: _____ State: _____ Zip: _____

Contractor: _____

Local Representative: _____

Engineer: _____

Address: _____

City: _____ State: _____ Zip: _____ Phone#: _____

Notes: _____



Printed in U.S.A.
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Form# LSAG1-1M-03/04 (LES)
Replaces Form# LSAG-1-1M-04/01

Specifications & Clearances

Product Features

APPROVALS

- IAS, CSA.
- Indoor/outdoor approval.
- Commercial approval.

BURNER SIGHT GLASS

- For burner inspection.

COMBUSTION AIR INLET & VENT

- 4" Male duct.

WATERPROOFED CONTROL BOX

- Outside air collar (4") attached.
- Totally enclosed components.

POWER SUPPLY

- 120 V.A.C., 60 Hz GRD, 3-wire.
- Ignition current-4.8 amps.
- Running current-1.1 amps.
- 24V control voltage.

CONTROLS

- 100% safety shut off.
- Moisture and corrosion resistant ignition module.
- Differential pressure switch.
- Stainless steel flame swirl burner.
- Silicon carbide hot surface igniter.
- Flame rod sensing.
- Pre-purge controls.
- Indicator lights.

GAS CONNECTION

- 7/8" flare-M FPT Connection to 1/2"x2' SS (304) flex connector provided.
- 1/2" F NPT gas cock included.

GAS SUPPLY-W.C.P. NAT LP

- Manifold pressure 3.5" 10.0"
- Min. Inlet pressure 5.0" 11.0"
- Max. Inlet pressure 14.0" 14.0"

EMMITER & COMBUSTION TUBES

- 16ga. 4" O.D. hot rolled steel.
- Slip fit connection.
- Aluminized combustion chamber (50-125 MBTU/H models).
- Titanium alloy treated combustion chamber (150 MBTU/H models).

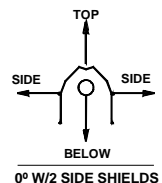
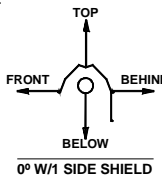
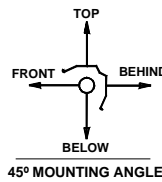
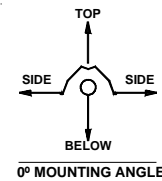
WARRANTY

- 1 year - Burner box components.
- 3 years - Combustion and radiant tubes.
- 5 years - Burner.

OTHER

- One reflector center support per heater.
- Turbulator baffle included.
- Made in U.S.A.
- Visit www.reverberray.com for additional information and parts reference.

CLEARANCES TO COMBUSTIBLES (IN.)					
MODEL NO.	MOUNTING ANGLE	SIDE		TOP	BELOW
		FRONT	BEHIND		
AG1-(20,30,40)-50 [N,P]	0°	9	9	6	47
W/1 side shield	45°	39	8	10	47
W/2 side shields	0°	29	8	6	47
20 ft from burner	0°	9	9	6	47
	0°	7	7	6	30
AG1-(20,30,40)-60 [N,P]	0°	9	9	6	47
W/1 side shield	45°	39	8	10	47
W/2 side shields	0°	29	8	6	47
20 ft from burner	0°	9	9	6	47
	0°	7	7	6	30
AG1-(20,30,40)-75 [N,P]	0°	9	9	6	60
W/1 side shield	45°	39	8	10	60
W/2 side shields	0°	29	8	6	60
20 ft from burner	0°	9	9	6	60
	0°	7	7	6	30
AG1-(30,40,50)-100 [N,P]	0°	14	14	6	66
W/1 side shield	45°	39	8	10	66
W/2 side shields	0°	29	8	6	66
20 ft from burner	0°	16	16	6	66
	0°	7	7	6	30
AG1-(40,50,60)-125 [N,P]	0°	20	20	6	76
W/1 side shield	45°	58	8	10	76
W/2 side shields	0°	42	8	6	76
20 ft from burner	0°	20	20	6	76
	0°	7	7	6	30
AG1-(40,50,60)-150 [N,P]	0°	24	24	6	81
W/1 side shield	45°	58	8	10	81
W/2 side shields	0°	42	8	6	81
20 ft from burner	0°	23	23	6	81
	0°	11	11	6	44



OPTIONAL ADD-ON ACCESSORIES

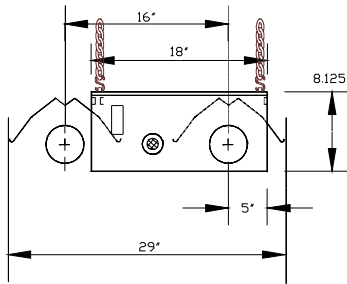
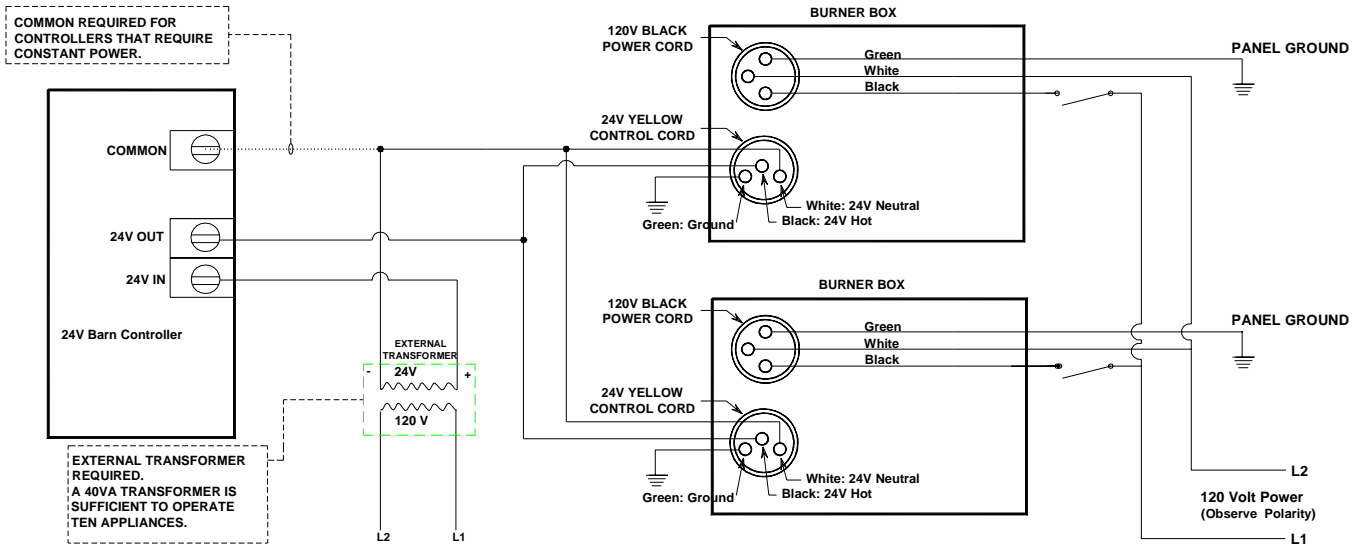
- ALUM-AO.** Upgrade hot rolled steel tubes to black coated aluminized steel for maximum efficiency and longevity.
- PC-36.** Three prong power cord set. Allows heater to be plugged into 120V grounded outlet.
- 5EA-SUB.** Substitute one 10' radiant tube and reflector for two 5' pieces. This is ideal for making "U" heaters from 30' and 50' models. Maximum of one per heater.



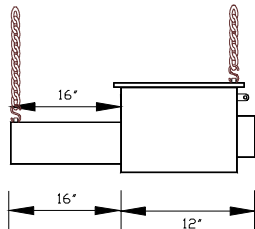
Field Data & Accessories

AG-1 FIELD WIRING WITH INTERNAL RELAY

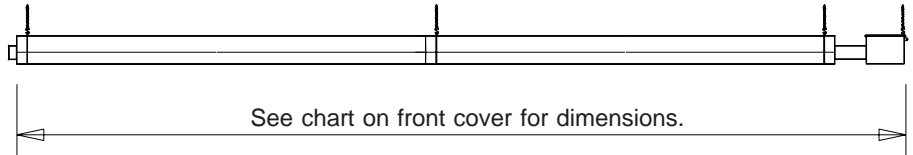
THE INTERNAL RELAY ALLOWS FOR LOW VOLTAGE T-STAT OPERATION OF LINE VOLTAGE HEATERS



End View showing "U" configuration



Side View



QTY.	PART#	DESCRIPTION	NOTES
	WIV-4	4" combustion air intake - sidewall cap.	Used to duct fresh (cold) air 0-20ft. to a heater. Sidewall only.
	WVE-GALV	4" unvented exhaust termination cap.	Required on all units when operating unvented.
	4-DSK	4" sidewall vent kit.	Required for all single sidewall vents. No roof venting.
	6-DSK	6" sidewall vent kit.	Required for all common sidewall vents. No roof venting.
	Y	4" x 4" x 6" common Y vent fitting.	Used for joining two heaters on one vent. Same T-stat required.
	E6	90 degree, 4" radiant elbow.	Used for making a "L" tube shaped heater. Max. two per unit.
	RE	Reflector elbow shield.	Reflector and accessories used to cover E6.
	TF1B	180 degree, 4" radiant "U" bend.	Used for making a "U" shaped heater. Max. one per unit.
	SMB	Single mount bracket.	Provides units with "U" bend uniform mounting points. One per 10'.
	RU	Reflector "U" shield.	Reflector and accessories used to cover TF1B.
	TR60	5' x 4" tube & reflector extension.	Optional 5' extension package. Max. two per unit.
	10EA	10' x 4" tube & reflector extension.	Optional 10' extension package. Max. one per unit.
	SSE	Side shield extension.	Reflector side guard used to lower side clearances. Each 5' in length.
	PG	Protective guard.	Protects heat exchanger from contact or objects. Each 5' in length.
	PLQ	Warning plaque.	Restates the clearance to combustible warning.
	BK	Angle mounting bracket 10-25-45 Deg.	Rotates unit to preset mounting angles.
	AK-T4	Agricultural air intake kit.	Used to provide outside combustion air to heater. Dual Air openings.



Written Specifications

HEATER PARAMETERS/SPECIFICATIONS

- Gas fired radiant tube heaters shall be furnished and installed in accordance with governing codes and as shown per drawing(s) provided. Radiant tube heaters shall be **AG1 SERIES** of the model numbers and inputs(s) in BTU/H as manufactured by Detroit Radiant Products Company, Warren, MI 48089.
- Radiant tube heaters shall be Design Certified by the American Gas Association (AGA) and comply with current Occupational Safety and Health Act (OSHA) Requirements. The supplier shall provide the AGA Certification Number and the heaters shall bear the AGA Seal of Certification.
- The supplier shall provide a manufacturer's published warranty covering the heater's stainless steel burner for a period of five (5) years, combustion and radiant emitter tube assembly for a period of three (3) years, and all components utilized in the heater control assembly for a period of one (1) year.
- The supplier shall furnish the owner/contractor with _____ copies of the engineering specification forms, showing physical dimensions, installation detail, recommendations, control wiring diagrams, and spare parts list.
- Radiant tube heaters shall be designed to satisfactorily operate at a minimum inlet pressure of _____ inches W.C. on natural gas, _____ inches W.C. on LP gas to a maximum inlet pressure of _____ inches W.C. on natural or LP gas.
- Radiant tube heaters shall be designed to operate without adjustments when burning natural gas having a heat value of _____ BTU per cubic foot with a specific gravity of _____, or when burning propane gas have a heat value of 2500 BTU per cubic foot with a specific gravity of 1.53.
- An Installation, Operation, and Maintenance Manual shall be supplied with each heater.

RADIANT TUBE HEATER BURNER CONTROLS

- Heater shall be equipped with a moisture and corrosion resistant potted ignition control module.
- Heater shall be equipped with a direct silicon carbide ignition system with a one (1)-time ignition trial to sensing mode and an infinite trial after sensing mode. Power supplied to each burner shall be 120 VAC, 60 Hz.
- Heater controls shall have independent flame rod sensing.
- The main burner shall be constructed of stainless steel.
- The control assembly shall be Design Certified by AGA, shall provide main burner regulation, and shall be of the redundant type.
- Heater control voltage shall be 24VAC.

- Heater controls shall include one safety differential pressure switch to monitor exhaust back pressure and combustion air flow, so as to provide complete burner shutdown due to insufficient combustion air or flue blockage.
- The heater's control system shall be designed to shutoff the gas flow to the main burner in the event either a gas supply or power supply interruption occurs.
- The heater's air flow control system shall provide a 45 second pre-purge prior to initiating burner operation.
- No condensation shall form as a result of combustion in the combustion chamber or radiant tubes while at operating temperatures.

RADIANT TUBE HEATER CONSTRUCTION

- Total heater shutdown shall occur in the event of circuit control lockout. An interruption of power (reset thermostat) will restart the firing sequence.
- The heater's control housing shall be totally enclosed with a corrosion resistant enameled steel exterior. The controls shall be easily serviceable by removing one (1) panel.
- The heater's combustion chamber shall be 4" O.D. 16ga. titanium alloy treated or aluminized steel finished with a high emissivity rated, corrosion resistant, black coating.
- Heater's radiant emitter tube shall be 4" O.D. 16ga. hot rolled steel.
- The heater's combustion chamber and radiant emitter tube shall incorporate a 4" slip fit connection in which the upstream tube slides into the next tube and is held by a bolted clamp.
- The silicon carbide ignitor shall be readily accessible and serviceable without the use of tools.
- Reflectors shall be .025 polished aluminum with a multi-faceted design which includes reflector end caps. Reflectors shall be rotatable from 0 to 45 degrees when required. The heater's reflector hanging system shall be designed to permit expansion while minimizing noise and/or rattles. Reflectors shall be assembled to the heater without the use of tools.
- The heaters shall utilize a downstream turbulator baffle for maximum thermal efficiency.
- Heaters shall be equipped with a sight glass allowing a visual inspection of ignitor and burner operation from the floor.
- The radiant tube heaters shall be designed such that, at the customer's option, outside combustion air may be supplied without the use of additional supply fans. An air intake collar shall be supplied as part of the burner control assembly to accept a 4" O.D. supply duct.

