RFG RADiFlame
RADIANT TUBE GAS BURNERS

NATURAL GAS, AMBIENT COMBUSTION AIR OPERATION

SPECIFICATIONS		BURNER MODEL			
		120B	220B	125B	225B
Maximum Capacity(10% Excess Air)	**(BTU/hr)**	**500,000**	**500,000**	**880,000**	**880,000**
	(kW)	**130**	**130**	**230**	**230**
Air Capacity	(scfh)	5,180	5,180	9,100	9,100
	(nm^3/hr)	139	139	244	244
Air Inlet Pressure	(in.w.c.)	27.7	13.9	27.7	18.7
	(mbar)	68.9	34.5	68.9	46.5
Gas Inlet Pressure	(in.w.c.)	3.5	3.5	8.5	8.5
	(mbar)	8.7	8.7	21.1	21.1
Flame Length	(in)	120	120	132	132
	(m)	3.0	3.0	3.4	3.4
Operating Limits	(Excess Air)	450%	450%	325%	325%
	(λ)	5.5	5.5	4.3	4.3

NATURAL GAS, 800°F/425°C PREHEATED COMBUSTION AIR OPERATION

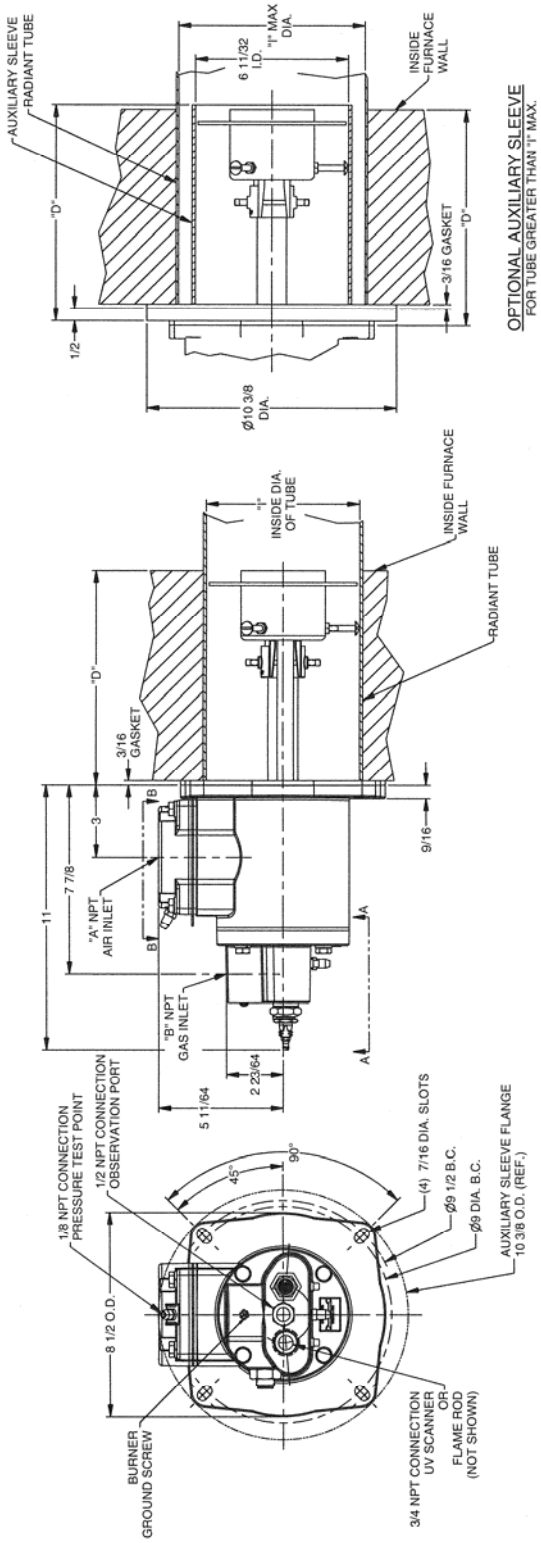
SPECIFICATIONS		BURNER MODEL			
		120B	220B	125B	225B
Maximum Capacity(10% Excess Air)	**(BTU/hr)**	**320,000**	**320,000**	**560,000**	**560,000**
	(kW)	**80**	**80**	**150**	**150**
Air Capacity	(scfh)	3,330	3,330	5,855	5,855
	(nm^3/hr)	89	89	157	157
Air Inlet Pressure	(in.w.c.)	27.7	13.9	27.7	18.7
	(mbar)	68.9	34.5	68.9	46.5
Gas Inlet Pressure	(in.w.c.)	2.7	2.7	6.4	6.4
	(mbar)	6.7	6.7	15.9	15.9
Flame Length	(in)	90	90	100	100
	(m)	2.3	2.3	2.5	2.5
Operating Limits	(Excess Air)	360%	360%	260%	260%
	(λ)	4.6	4.6	3.6	3.6

NOTES:

1. Capacities based on Natural Gas with HHV of 1034 BTU/ft^3 (Standard), and LHV of 10.21 kWh/nm3 (Metric), 0.59 S.G., and a stoichiometric ratio of 9.74:1 with burner firing into chamber under no pressure. At less than 25% of maximum capacity, 100% excess air operation is recommended and above 25% of maximum capacity, 10% excess air operation in recommended.
2. Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
3. Gas inlet pressure given for reference only and should not be used for measuring fuel flow to the burner.
4. Flame lengths measured from end of the ignition nozzle and are affected by tube diameter, tube geometry and operating conditions.
5. Flame detection via UV scanner or flame ionization rod.
6. Ignition limits are established with direct spark igniter, metered air and fuel flows and 5kV/15mA spark ignition transformer; for limits listed as "N/R" ignition is Not Recommended at this capacity.
7. Burner is suitable for use on gaseous fuels other than Natural Gas, including propane gas, liquid petroleum gas and coke oven gas.
8. Burner is suitable for use on push, push-pull or pull through type systems.
9. Maximum tube diameter 7.5 Inches (190 mm) for RFG_20 and 9.25 Inches (235mm) for RFG_25. For tubes exceeding these diameters, an auxilliary tube is required; consult Hauck.

In accordance with Hauck's commitment to Total Quality Improvement, Hauck reserves the right to change the specifications of products without prior notice.

RFG RADiFlame
RADIANT TUBE GAS BURNER



BURNER MODEL NO.	A AIR INLET	B GAS INLET	D	I	
				MIN.	MAX.
RFG_20B	2 NPT	3/4 NPT	9" - 24"	4	7 1/2
RFG_25B	2 1/2 NPT			4 1/4	9 1/4

Y8142
(NOT TO SCALE)

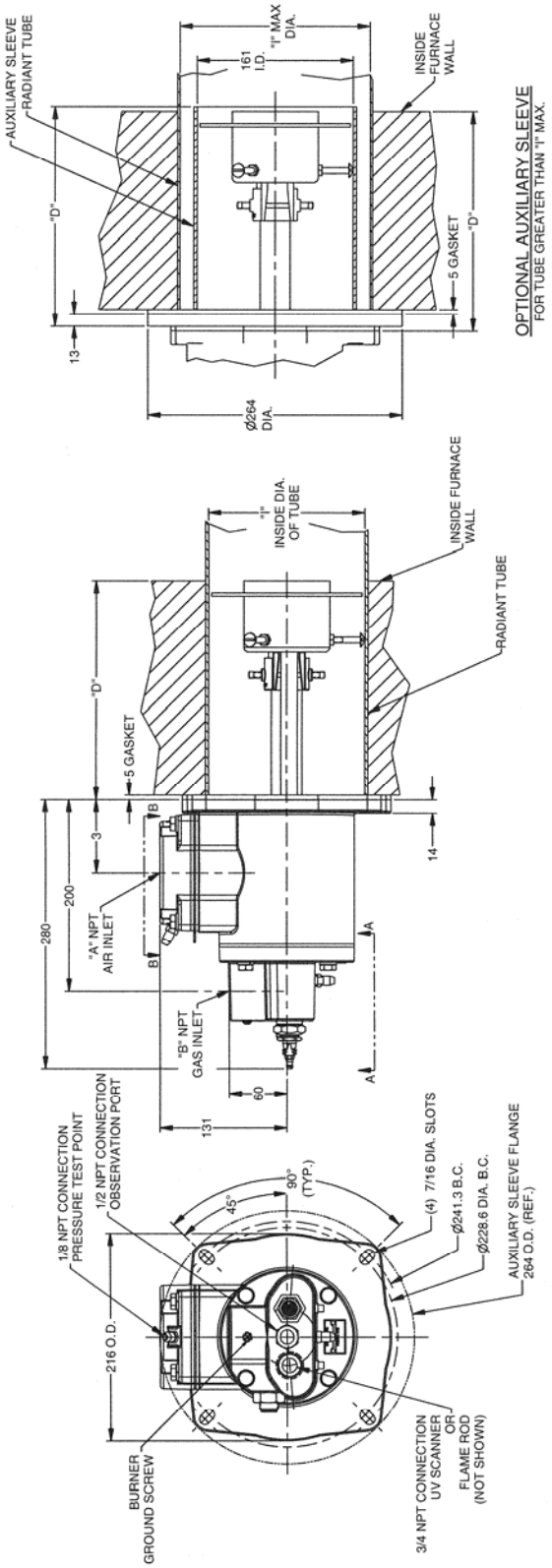
NOTES
1. DIMENSIONS "D" & "I" MUST BE SPECIFIED; LENGTH "D" IN 1" INCREMENTS AND "I" IN 1/8" INCREMENTS WITHIN THE LISTED MIN- MAX RANGE.
2. AIR & GAS INLETS MAY BE LOCATED AT 3, 6, 9 OR 12 O'CLOCK POSITION; MUST BE SPECIFIED ON ORDER.

(See Reverse Side for Metric Dimensions)

In accordance with Hauck's commitment to Total Quality Improvement, Hauck reserves the right to change the specifications of products without prior notice.

METRIC DIMENSIONS

RFG RADiFlame
RADIANT TUBE GAS BURNER



BURNER MODEL NO.	A AIR INLET	B GAS INLET	D	
			MIN.	MAX.
RFG_20B	2 NPT	3/4 NPT	102	191
RFG_25B	2 1/2 NPT		108	235

228.6 - 609.6

Y8142 METRIC
(NOT TO SCALE)

NOTES
1. DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONS "D" & "I" MUST BE SPECIFIED; LENGTH "D" IN 25.4MM INCREMENTS AND "I" IN 3MM INCREMENTS WITHIN THE LISTED MIN- MAX RANGE.
3. AIR & GAS INLETS MAY BE LOCATED AT 3, 6, 9 OR 12 O'CLOCK POSITION; MUST BE SPECIFIED ON ORDER.

In accordance with Hauck's commitment to Total Quality Improvement, Hauck reserves the right to change the specifications of products without prior notice.

RFG RADiFlame
RADIANT TUBE GAS BURNERS
Burner Capacity Information, RFG 120B

NATURAL GAS, AMBIENT COMBUSTION AIR OPERATION

SPECIFICATIONS		OPERATIONAL INFORMATION				
Capacity	**(BTU/hr)**	**60,000**	**260,000**	**370,000**	**440,000**	**500,000**
	(kW)	**20**	**70**	**100**	**120**	**130**
Air Capacity	(scfh)	1,100	2,725	3,800	4,575	5,180
	(nm^3/hr)	29	73	102	123	139
Air Inlet Pressure	(in.w.c.)	0.9	6.9	13.8	20.8	27.7
	(mbar)	2.2	17.2	34.3	51.8	68.9
Gas Inlet Pressure	(in.w.c.)	0.2	1.0	2.0	2.8	3.5
	(mbar)	0.4	2.5	5.0	7.0	8.7
Flame Length	(in)	60	78	96	108	120
	(mm)	1520	1980	2440	2740	3050
Operating Limits	(Excess Air)	200%	300%	400%	425%	450%
	(λ)	3.0	4.0	5.0	5.3	5.5
Maximum Ignition Gas	(scfh)	100	285	375	400	425
	(nm^3/hr)	2.7	7.6	10.0	10.7	425.0
Minimum Ignition Gas	(scfh)	40	75	85	95	100
	(nm^3/hr)	1.1	2.0	2.3	2.5	100.0

NATURAL GAS, 800°F/425°C PREHEATED COMBUSTION AIR OPERATION

SPECIFICATIONS		OPERATIONAL INFORMATION				
Capacity	**(BTU/hr)**	**40,000**	**170,000**	**240,000**	**280,000**	**320,000**
	(kW)	**10**	**40**	**60**	**70**	**80**
Air Capacity	(scfh)	707	1,753	2,444	2,942	3,331
	(nm^3/hr)	19	47	65	79	89
Air Inlet Pressure	(in.w.c.)	0.9	6.9	13.8	20.8	27.7
	(mbar)	2.2	17.2	34.3	51.8	68.9
Gas Inlet Pressure	(in.w.c.)	0.1	0.8	1.5	2.1	2.7
	(mbar)	0.3	1.9	3.8	5.3	6.6
Flame Length	(in)	45	59	72	81	90
	(mm)	1140	1490	1830	2060	2290
Operating Limits	(Excess Air)	160%	240%	320%	340%	360%
	(λ)	2.6	3.4	4.2	4.4	4.6
Maximum Ignition Gas	(scfh)	69	171	239	288	326
	(nm^3/hr)	1.9	4.6	6.4	7.7	325.8
Minimum Ignition Gas	(scfh)	28	53	60	69	74
	(nm^3/hr)	0.7	1.4	1.6	1.8	74.4

NOTES:

1. Capacities based on Natural Gas with HHV of 1034 BTU/ft^3 (Standard), and LHV of 10.21 kWh/nm^3 (Metric), 0.59 S.G., and a stoichiometric ratio of 9.74:1 with burner firing into chamber under no pressure. At less than 25% of maximum capacity, 100% excess air operation is recommended and above 25% of maximum capacity, 10% excess air operation in recommended.
2. Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
3. Gas inlet pressure given for reference only and should not be used for measuring fuel flow to the burner.
4. Flame lengths measured from end of the ignition nozzle and are affected by tube diameter, tube geometry and operating conditions.
5. Flame detection via UV scanner or flame ionization rod.
6. Ignition limits are established with direct spark igniter, metered air and fuel flows and 5kV/15mA spark ignition transformer; for limits listed as N/R ignition is Not Recommended at this capacity.
7. Burner is suitable for use on gaseous fuels other than Natural Gas, including propane gas, liquid petroleum gas and coke oven gas.
8. Burner is suitable for use on push, push-pull or pull through type systems.
9. Maximum tube diameter 7.5 Inches (190mm). For tubes exceeding this diameter, an auxilliary tube is required; consult Hauck.

In accordance with Hauck's commitment to Total Quality Improvement, Hauck reserves the right to change the specifications of products without prior notice.

RFG RADiFlame
RADIANT TUBE GAS BURNERS
Burner Capacity Information, RFG 220B

NATURAL GAS, AMBIENT COMBUSTION AIR OPERATION

SPECIFICATIONS		OPERATIONAL INFORMATION				
Capacity	**(BTU/hr)**	**60,000**	**260,000**	**370,000**	**440,000**	**500,000**
	(kW)	**20**	**70**	**100**	**120**	**130**
Air Capacity	(scfh)	1,100	2,725	3,800	4,575	5,180
	(nm^3/hr)	29	73	102	123	139
Air Inlet Pressure	(in.w.c.)	0.6	3.5	6.9	10.5	13.9
	(mbar)	1.5	8.6	17.2	26.0	34.5
Gas Inlet Pressure	(in.w.c.)	0.2	1.0	2.0	2.8	3.5
	(mbar)	0.4	2.5	5.0	7.0	8.7
Flame Length	(in)	60	78	96	108	120
	(mm)	1520	1980	2440	2740	3050
Operating Limits	(Excess Air)	200%	300%	400%	425%	450%
	(λ)	3.0	4.0	5.0	5.3	5.5
Maximum Ignition Gas	(scfh)	100	285	375	400	425
	(nm^3/hr)	2.7	7.6	10.0	10.7	425.0
Minimum Ignition Gas	(scfh)	40	75	85	95	100
	(nm^3/hr)	1.1	2.0	2.3	2.5	100.0

NATURAL GAS, 800°F/425°C PREHEATED COMBUSTION AIR OPERATION

SPECIFICATIONS		OPERATIONAL INFORMATION				
Capacity	**(BTU/hr)**	**40,000**	**170,000**	**240,000**	**280,000**	**320,000**
	(kW)	**10**	**40**	**60**	**70**	**80**
Air Capacity	(scfh)	707	1,753	2,444	2,942	3,331
	(nm^3/hr)	19	47	65	79	89
Air Inlet Pressure	(in.w.c.)	0.6	3.5	6.9	10.5	13.9
	(mbar)	1.5	8.6	17.2	26.0	34.5
Gas Inlet Pressure	(in.w.c.)	0.1	0.8	1.5	2.1	2.7
	(mbar)	0.3	1.9	3.8	5.3	6.6
Flame Length	(in)	45	59	72	81	90
	(mm)	1140	1490	1830	2060	2290
Operating Limits	(Excess Air)	160%	240%	320%	340%	360%
	(λ)	2.6	3.4	4.2	4.4	4.6
Maximum Ignition Gas	(scfh)	69	171	239	288	326
	(nm^3/hr)	1.9	4.6	6.4	7.7	325.8
Minimum Ignition Gas	(scfh)	28	53	60	69	74
	(nm^3/hr)	0.7	1.4	1.6	1.8	74.4

NOTES:

1. Capacities based on Natural Gas with HHV of 1034 BTU/ft^3 (Standard), and LHV of 10.21 kWh/nm^3 (Metric), 0.59 S.G., and a stoichiometric ratio of 9.74:1 with burner firing into chamber under no pressure. At less than 25% of maximum capacity, 100% excess air operation is recommended and above 25% of maximum capacity, 10% excess air operation in recommended.
2. Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
3. Gas inlet pressure given for reference only and should not be used for measuring fuel flow to the burner.
4. Flame lengths measured from end of the ignition nozzle and are affected by tube diameter, tube geometry and operating conditions.
5. Flame detection via UV scanner or flame ionization rod.
6. Ignition limits are established with direct spark igniter, metered air and fuel flows and 5kV/15mA spark ignition transformer; for limits listed as N/R ignition is Not Recommended at this capacity.
7. Burner is suitable for use on gaseous fuels other than Natural Gas, including propane gas, liquid petroleum gas and coke oven gas.
8. Burner is suitable for use on push, push-pull or pull through type systems.
9. Maximum tube diameter 7.5 Inches (190 mm). For tubes exceeding this diameter, an auxilliary tube is required; consult Hauck.

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RFG RADiFlame
RADIANT TUBE GAS BURNERS

Burner Capacity Information, RFG 125B

NATURAL GAS, AMBIENT COMBUSTION AIR OPERATION

SPECIFICATIONS		OPERATIONAL INFORMATION				
Capacity	**(BTU/hr)**	**100,000**	**430,000**	**620,000**	**750,000**	**880,000**
	(kW)	**30**	**110**	**160**	**200**	**230**
Air Capacity	(scfh)	1,800	4,500	6,400	7,750	9,100
	(nm^3/hr)	48	121	171	208	244
Air Inlet Pressure	(in.w.c.)	0.9	6.9	13.8	20.8	27.7
	(mbar)	2.2	17.2	34.3	51.8	68.9
Gas Inlet Pressure	(in.w.c.)	0.4	2.4	4.5	6.5	8.5
	(mbar)	1.0	5.9	11.1	16.2	21.0
Flame Length	(in)	60	78	108	120	132
	(mm)	1520	1980	2740	3050	3350
Operating Limits	(Excess Air)	200%	500%	400%	325%	325%
	(λ)	3.0	6.0	5.0	4.3	4.2
Maximum Ignition Gas	(scfh)	150	300	400	500	N/R
	(nm^3/hr)	4.0	8.0	10.7	13.4	N/R
Minimum Ignition Gas	(scfh)	65	80	150	200	N/R
	(nm^3/hr)	1.7	2.1	4.0	5.4	N/R

NATURAL GAS, 800°F/425°C PREHEATED COMBUSTION AIR OPERATION

SPECIFICATIONS		OPERATIONAL INFORMATION				
Capacity	**(BTU/hr)**	**60,000**	**280,000**	**400,000**	**480,000**	**560,000**
	(kW)	**20**	**70**	**110**	**130**	**150**
Air Capacity	(scfh)	1,158	2,894	4,116	4,984	5,853
	(nm^3/hr)	31	78	110	134	157
Air Inlet Pressure	(in.w.c.)	0.9	6.9	13.8	20.8	27.7
	(mbar)	2.2	17.2	34.3	51.8	68.9
Gas Inlet Pressure	(in.w.c.)	0.3	1.8	3.4	4.9	6.4
	(mbar)	0.8	4.5	8.4	12.3	16.0
Flame Length	(in)	45	59	81	90	99
	(mm)	1140	1490	2060	2290	2510
Operating Limits	(Excess Air)	160%	400%	320%	260%	260%
	(λ)	2.6	5.0	4.2	3.6	3.6
Maximum Ignition Gas	(scfh)	113	283	402	500	N/R
	(nm^3/hr)	3.0	7.6	10.8	13.4	N/R
Minimum Ignition Gas	(scfh)	46	59	101	142	N/R
	(nm^3/hr)	1.2	1.6	2.7	3.8	N/R

NOTES:

1. Capacities based on Natural Gas with HHV of 1034 BTU/ft^3 (Standard), and LHV of 10.21 kWh/nm^3 (Metric), 0.59 S.G., and a stoichiometric ratio of 9.74:1 with burner firing into chamber under no pressure. At less than 25% of maximum capacity, 100% excess air operation is recommended and above 25% of maximum capacity, 10% excess air operation in recommended.
2. Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
3. Gas inlet pressure given for reference only and should not be used for measuring fuel flow to the burner.
4. Flame lengths measured from end of the ignition nozzle and are affected by tube diameter, tube geometry and operating conditions.
5. Flame detection via UV scanner or flame ionization rod.
6. Ignition limits are established with direct spark igniter, metered air and fuel flows and 5kV/15mA spark ignition transformer; for limits listed as N/R ignition is Not Recommended at this capacity.
7. Burner is suitable for use on gaseous fuels other than Natural Gas, including propane gas, liquid petroleum gas and coke oven gas.
8. Burner is suitable for use on push, push-pull or pull through type systems.
9. Maximum tube diameter 9.25 Inches (235mm). For tubes exceeding this diameter, an auxilliary tube is required; consult Hauck.

In accordance with Hauck's commitment to Total Quality Improvement, Hauck reserves the right to change the specifications of products without prior notice.

RFG RADiFlame
RADIANT TUBE GAS BURNERS
Burner Capacity Information, RFG 225B

NATURAL GAS, AMBIENT COMBUSTION AIR OPERATION

SPECIFICATIONS		OPERATIONAL INFORMATION				
Capacity	**(BTU/hr)**	**100,000**	**430,000**	**620,000**	**750,000**	**880,000**
	(kW)	**30**	**110**	**160**	**200**	**230**
Air Capacity	(scfh)	1,800	4,500	6,400	7,750	9,100
	(nm^3/hr)	48	121	171	208	244
Air Inlet Pressure	(in.w.c.)	0.6	4.2	8.8	13.3	18.7
	(mbar)	1.5	10.4	22.0	33.1	46.5
Gas Inlet Pressure	(in.w.c.)	0.4	2.4	4.5	6.5	8.5
	(mbar)	1.0	5.9	11.1	16.2	21.0
Flame Length	(in)	60	78	108	120	132
	(mm)	1520	1980	2740	3050	3350
Operating Limits	(Excess Air)	200%	500%	400%	325%	325%
	(λ)	3.0	6.0	5.0	4.3	4.2
Maximum Ignition Gas	(scfh)	150	300	400	500	N/R
	(nm^3/hr)	4.0	8.0	10.7	13.4	N/R
Minimum Ignition Gas	(scfh)	65	80	150	200	N/R
	(nm^3/hr)	1.7	2.1	4.0	5.4	N/R

NATURAL GAS, 800°F/425°C PREHEATED COMBUSTION AIR OPERATION

SPECIFICATIONS		OPERATIONAL INFORMATION				
Capacity	**(BTU/hr)**	**60,000**	**280,000**	**400,000**	**480,000**	**560,000**
	(kW)	**20**	**70**	**110**	**130**	**150**
Air Capacity	(scfh)	1,158	2,894	4,116	4,984	5,853
	(nm^3/hr)	31	78	110	134	157
Air Inlet Pressure	(in.w.c.)	0.6	4.2	8.8	13.3	18.7
	(mbar)	1.5	10.4	22.0	33.1	46.5
Gas Inlet Pressure	(in.w.c.)	0.3	1.8	3.4	4.9	6.4
	(mbar)	0.8	4.5	8.4	12.3	16.0
Flame Length	(in)	45	59	81	90	99
	(mm)	1140	1490	2060	2290	2510
Operating Limits	(Excess Air)	160%	400%	320%	260%	260%
	(λ)	2.6	5.0	4.2	3.6	3.6
Maximum Ignition Gas	(scfh)	113	283	402	500	N/R
	(nm^3/hr)	3.0	7.6	10.8	13.4	N/R
Minimum Ignition Gas	(scfh)	46	59	101	142	N/R
	(nm^3/hr)	1.2	1.6	2.7	3.8	N/R

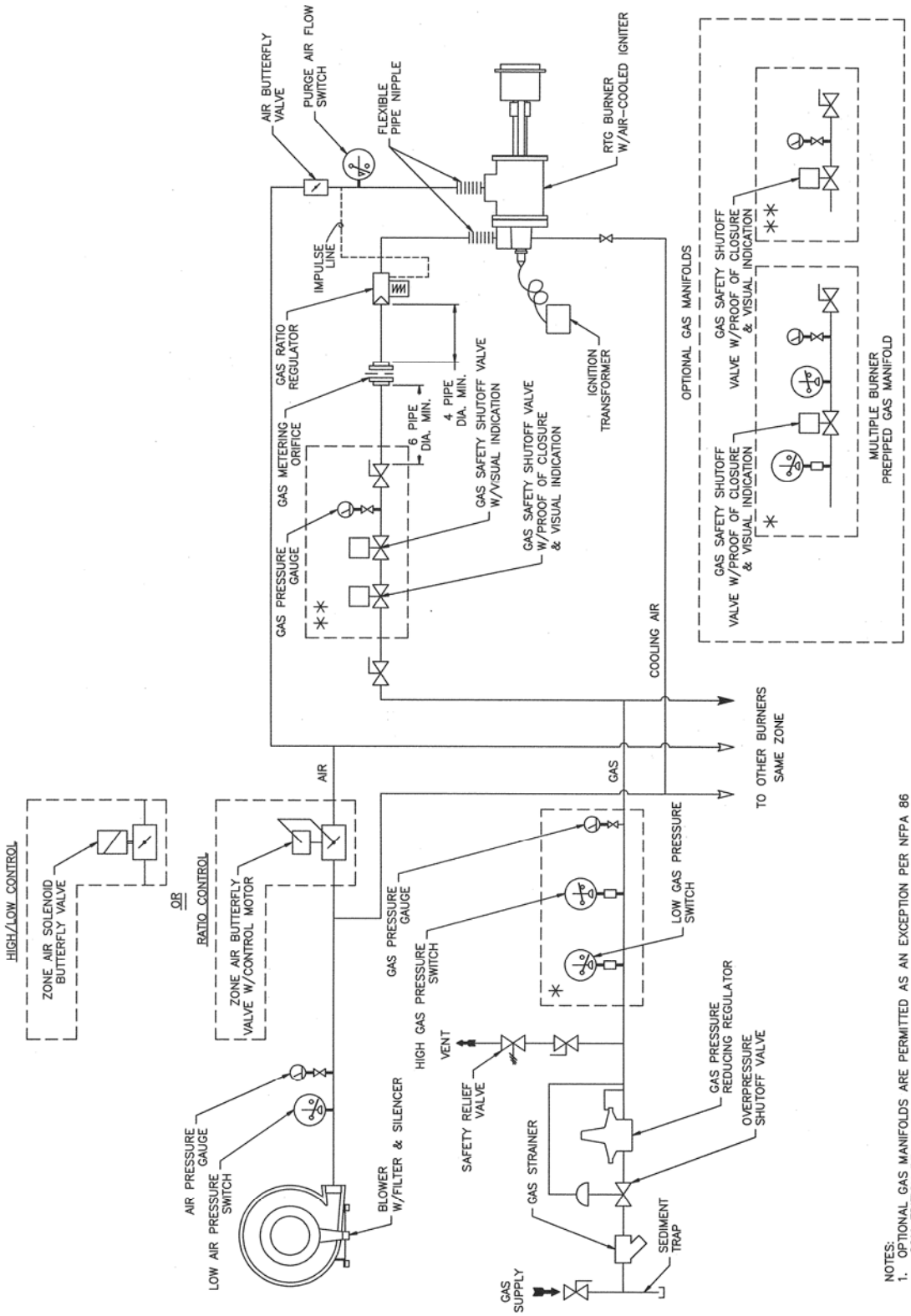
NOTES:

1. Capacities based on Natural Gas with HHV of 1034 BTU/ft^3 (Standard), and LHV of 10.21 kWh/nm^3 (Metric), 0.59 S.G., and a stoichiometric ratio of 9.74:1 with burner firing into chamber under no pressure. At less than 25% of maximum capacity, 100% excess air operation is recommended and above 25% of maximum capacity, 10% excess air operation in recommended.
2. Air and fuel flows based on STP operating conditions at sea level and industry standard air and gas piping practices.
3. Gas inlet pressure given for reference only and should not be used for measuring fuel flow to the burner.
4. Flame lengths measured from end of the ignition nozzle and are affected by tube diameter, tube geometry and operating conditions.
5. Flame detection via UV scanner or flame ionization rod.
6. Ignition limits are established with direct spark igniter, metered air and fuel flows and 5kV/15mA spark ignition transformer; for limits listed as N/R ignition is Not Recommended at this capacity.
7. Burner is suitable for use on gaseous fuels other than Natural Gas, including propane gas, liquid petroleum gas and coke oven gas.
8. Burner is suitable for use on push, push-pull or pull through type systems.
9. Maximum tube diameter 9.25 Inches (235mm). For tubes exceeding this diameter, an auxilliary tube is required; consult Hauck.

In accordance with Hauck's commitment to Total Quality Improvement, Hauck reserves the right to change the specifications of products without prior notice.

RFG RADiFlame
RADIANT TUBE GAS BURNERS

TYPICAL MULTIPLE BURNER SYSTEM
HIGH/LOW OR RATIO CONTROL



X8477
(NOT TO SCALE)

NOTES:
1. OPTIONAL GAS MANIFOLDS ARE PERMITTED AS AN EXCEPTION PER NFPA 86 2011 EDITION REQUIREMENTS FOR A RADIANT TUBE BURNER FIRING INTO A METAL TUBE OF EXPLOSION RESISTANT CONSTRUCTION, HOWEVER, SPECIAL FEATURES ARE REQUIRED IN THE ASSOCIATED CONTROL SYSTEM (SEE HAUCK APPLICATION SHEET GU76).

In accordance with Hauck's commitment to Total Quality Improvement, Hauck reserves the right to change the specifications of products without prior notice.

RFG RADiFlame
RADIANT TUBE GAS BURNERS

ORDERING INFORMATION

RFG – 1 20 B – 12 – 04.375

Burner Type

Series
1 – 100 Series (16 osig)
2 – 200 Series (8 osig)

Burner Air Inlet
20 – 2" NPT
25 – 2-1/2" NPT

Burner Revision
B

Furnace Wall Thickness
12 – "D" *

Radiant Tube I.D.
4-3/8 – "I" **

* Wall thickness available from 9-24 inches

** Tube ID available for RFG_20 of 4-7½"
RFG_25 of 4¼-9¼"

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