

PANRAD RADIANT TUBE

OPERATING PRINCIPLE

PANRAD radiating tube modules are now internationally distributed. Since they first appeared on the market in the 70s up to now, they have been much improved, both in terms of constructions and materials, as well as life and reliability. The PANRAD radiating tube module range consists essentially of a heat production unit with thermal power rating in the range 10 to 50 kW, a system of radiating tubes 6, 9 or 12 meters in length and a set of control and safety devices. The operating principle of PANRAD radiating tube modules is relatively simple and entails radiation by heating exchange tubes. The burner burns the air-gas mixture and the split flame heats the carrying fluid circulating in the exchange tubes. This carrying fluid, made up of combustion products, circulates inside radiating tubes comprising a delivery tube, a U-connection and a return tube. Activation of a suction unit located on the return tube creates a fall in pressure inside the tubes and this causes the carrying fluid to travel along the entire

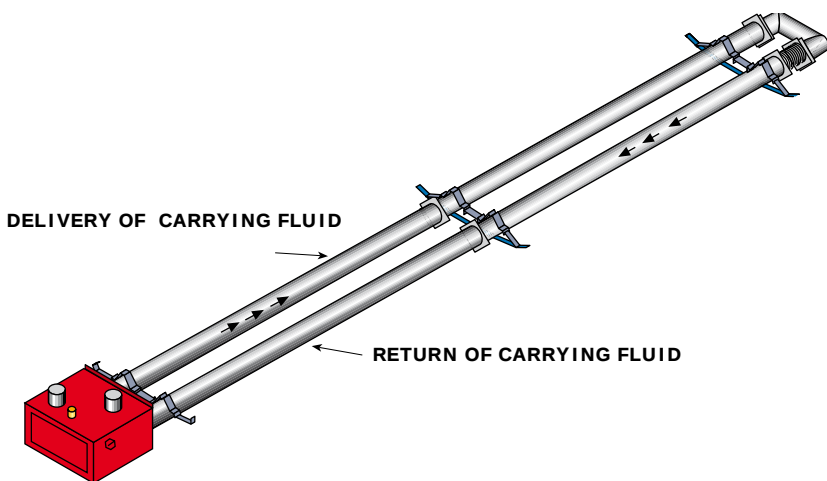


Fig. 1: Cross-section of emitter tubes

length of radiating tube which, in turn, by heating up, begin to radiate. To totally focus radiation toward the floor and the objects situated there, a reflecting dish in aluminium alloy is fitted above the emitter tubes. This dish recovers all radiations otherwise dispersed in the higher areas of the building being heated.

RANGE AND PERFORMANCE

MODEL	POWER [kW]	OPERATION	N. of Venturi	TUBE LENGTH [m]	POWER SUPPLY	Reflector
FRA2-3	15	On-Off	2	3	230V-50Hz	Standard
FRA2/FRA2S2	20/10-20	On-Off/2-stages	2	6	230V-50Hz	Standard
FRA3/FRA3S2	30/20-30	On-Off/2-stages	3	6	230V-50Hz	Standard
FRA4/FRA4S2	40/30-40	On-Off/2-stages	4	6	230V-50Hz	Standard
FRA4.1/FRA4.1S2	35/30-35	On-Off/2-stages	4	6	230V-50Hz	Standard
FRA5/FRA5S2	50/40-50	On-Off/2-stages	4	6	230V-50Hz	Standard
FRB3	30	On-Off	3	9	230V-50Hz	7 side with insulation
FRB4/FRB4S2	40/30-40	On-Off/2-stages	4	9	230V-50Hz	Standard
FRB4.1/FRB4.1S2	45/30-45	On-Off/2-stages	4	9	230V-50Hz	Standard
FRB5/FRB5S2	50/40-50	On-Off/2-stages	4	9	230V-50Hz	Standard
FRC4	40	On-Off	4	12	230V-50Hz	Standard
FRC5/FRC5S2	50/40-50	On-Off/2-stages	4	12	230V-50Hz	Standard

S U N L I K E H E A T I N G

TECHNICAL CHARACTERISTICS

On/Off Models			FRA2-3	FRA2	FRA3	FRA4.1	FRA4	FRA5	FRB3	FRB4	FRB4.1	FRB5	FRC4	FRC5
CE certification number			51BM2069		51BM2068	51BM2067			51BM2068	51BM2067				
Power PCS	Max.	[kW]	15	20	30	35	40	50	30	40	45	50	40	50
Power G2.350 PCS	Max.	[kW]	15	20	30	35	40	40	30	40	40	40	40	40
Gas Consumption PCS	G20	[m³st/h]	1,43	1,90	2,85	3,33	3,81	4,76	2,85	3,81	4,28	4,76	3,81	4,76
	G25	[m³st/h]	1,66	2,21	3,24	3,87	4,43	5,54	3,24	4,43	4,98	5,54	4,43	5,54
	G25.1	[m³st/h]	1,66	2,21	3,24	3,87	4,43	5,54	3,24	4,43	4,98	5,54	4,43	5,54
	G2.350	[m³st/h]	2,20	1,47	4,10	4,15	4,41	4,41	4,10	4,41	4,41	4,41	4,41	4,41
	G30	[Kg/h]	1,09	1,45	2,18	2,54	2,91	3,63	2,18	2,91	3,27	3,63	2,91	3,63
	G31	[Kg/h]	1,07	1,42	2,14	2,50	2,85	3,57	2,14	2,85	3,21	3,57	2,85	3,57
Dual Stage Burners				FRA2S2	FRA3S2	FRA4.1S2	FRA4S2	FRA5S2		FRB4S2	FRB4.1S2	FRB5S2		FRC5S2
CE certification number				51BM2069	51BM2068	51BM2067				51BM2067				51BM2067
Power PCS	Min/Max.	[kW]		10/20	20/30	30/35	30/40	40/50		30/40	30/45	40/50		40/50
Power G2.350 PCS	Min/Max.	[kW]		10/20	20/30	30/35	30/40	30/40		30/40	30/40	30/40		30/40
Gas Consumption PCS	G20	[m³st/h]		0,95÷1,90	1,90÷2,85	2,85÷3,33	2,85÷3,81	3,81÷4,76		2,85÷3,81	2,85÷4,28	3,81÷4,76		3,81÷4,76
	G25	[m³st/h]		1,10÷2,21	2,21÷3,24	3,24÷3,87	3,32÷4,43	4,43÷5,54		3,32÷4,43	3,32÷4,98	4,43÷5,54		4,43÷5,54
	G25.1	[m³st/h]		1,10÷2,21	2,21÷3,24	3,24÷3,87	3,32÷4,43	4,43÷5,54		3,32÷4,43	3,32÷4,98	4,43÷5,54		4,43÷5,54
	G2.350	[m³st/h]		1,47÷2,94	2,94÷4,10	4,41÷5,15	4,41÷5,88	4,41÷5,88		4,41÷5,88	4,41÷5,88	4,41÷5,88		4,41÷5,88
	G30	[Kg/h]	0,72÷1,45	1,45÷2,18	2,18÷2,54	2,18÷2,91	2,91÷3,63	2,18÷2,91	2,18÷3,27	2,91÷3,63	2,91÷3,63			
G31	[Kg/h]	0,71÷1,42	1,42÷2,14	2,14÷2,50	2,14÷2,85	2,85÷3,57	2,14÷2,85	2,14÷3,21	2,85÷3,57	2,85÷3,57	2,85÷3,57			
Burner type			Atmospheric											
Gas connection			1/2"											
Electricity supply		[VAC 1N]	1~ \ N \ 50 Hz 230V											
Power consumption		[Watt]	56,00											
Electrical power		[A]	0,50											
Burner weight		[Kg]	17											
Weight		[Kg]	63	108				147				185		
Venturi Tubes		[n°]	2		3	4			3	4				
Length of pipes		[m]	3	6				9				12		
Exchanger tube Ø		[mm]	89											
Flue Ø		[mm]	80											
Air intake Ø		[mm]	80											
Combustion Air		[m³/h]	30	40	60	75	80	100	60	80	90	100	80	100
Gas category			I3P; II2H3B/P; I2E(R)B; I3+; I3B/P; I2H; II2H3+; II2Esi3+; II2ELL3B/P; II2L3B/P; II2HS3B/P; II2ELs3B/P; II2E3B/P											

SUNLIKE HEATING