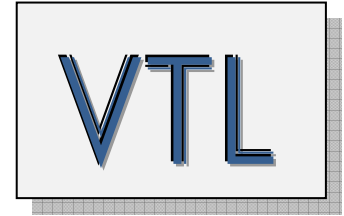
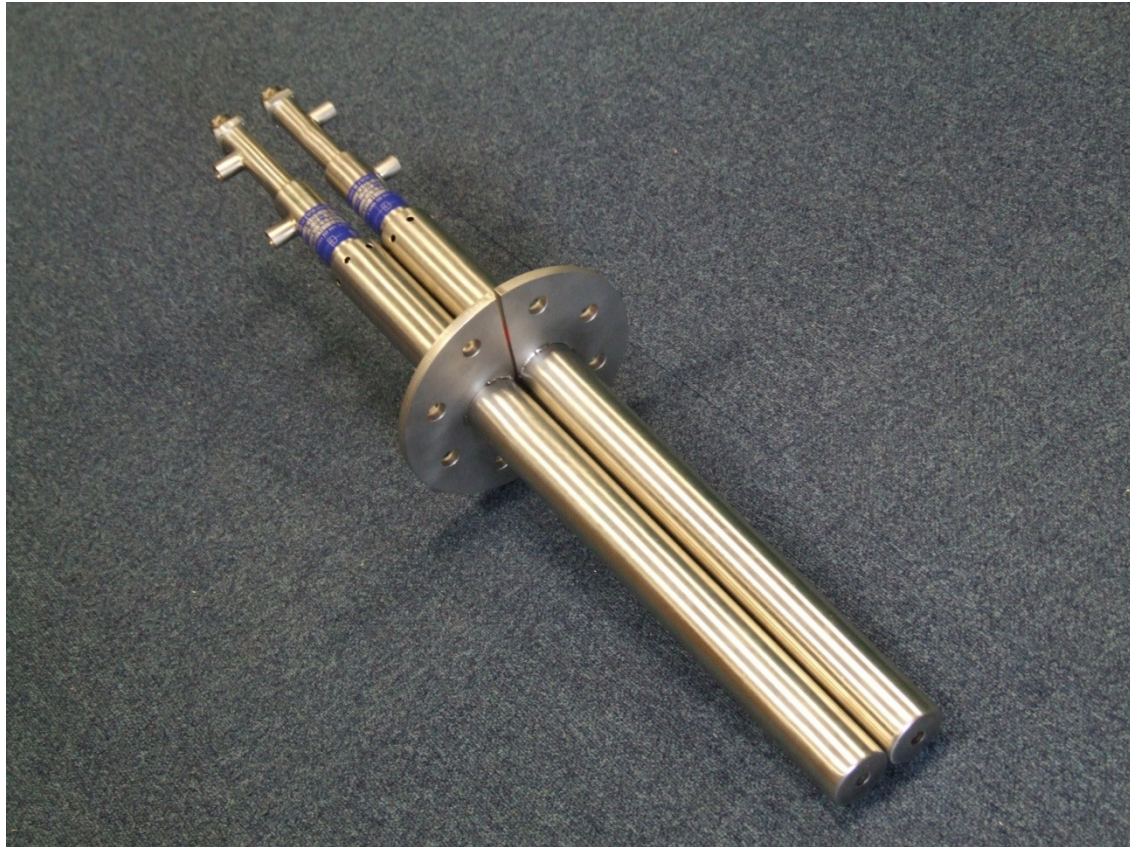


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VTL-14 DUAL-CAMERA FURNACE VIEWING SYSTEM

This unique system offers both colour and infra-red imaging from twin cameras viewing through a single port in the furnace wall.

Designed specifically for aluminium remelting furnaces, but with applications in other processes, this system offers the benefits of both normal visual observation and short wavelength infra-red imaging for better penetration of fumes and dust as well as an indication of the temperature distribution in the furnace interior.

The cameras are air-cooled to avoid the hazards of water and reactive metals, and have only the minimum of air discharged into the furnace interior.

The two cameras are mounted on a common flange attached to the furnace, but have individual half flanges to allow either camera to be removed individually. A blanking plate is provided to close off the furnace port when a camera is removed.

The VTL-14 camera system uses two separate air-cooled housings mounted on a split flange, allowing both cameras to be fitted to a single 110mm diameter penetration in the furnace wall or door.

One camera produces normal colour pictures, the other views images in the near infra-red spectrum (>850nm).

The infra-red image allows better visibility through fume, and also provides an indication of the temperature distribution inside the furnace. Note that this does not measure absolute temperature; it shows the relative temperatures of different areas of the furnace interior providing information on the uniformity of heat distribution.

Both cameras are completely independent, having individual control and cooling systems, and either camera can be used alone if required. When only one camera is fitted to the furnace, a blanking plate allows the empty half of the port to be sealed.

In order to minimise the amount of air entering the furnace, the primary cooling air is vented to atmosphere outside the furnace, with only a small amount of purge air entering the furnace, this air keeps the camera lens clean and helps camera cooling.

A control panel provides camera power and connectivity for the onward transmission of the pictures, camera temperature and cooling air pressure are also monitored, and any excursion outside normal values will generate an alarm to warn the plant operator.

Pictures are displayed on a video monitor, and may be shown either as full-screen colour, full screen infra-red, or a split-screen picture showing both cameras. Images can be recorded if required, and a network adaptor is also available to allow viewing of the images from other locations.

Specifications:

Cameras: solid-state Cmos sensor, resolution 768 x 576 (520 TVL).

Infra-red camera sensitive only to wavelengths above 850nm, colour camera shows only visible wavelengths.

Housing: Stainless-steel with dual air cooling system. Length to suit furnace wall/door thickness. Each housing is 54mm diameter; both will fit through 110mm penetration

Air supply: Primary air cooling supply should have capacity of 20 scf/min (10 l/sec) per camera, secondary air flow is 4 scf/min. (2 l/sec) These values are normally adjusted in operation for minimum flow required to provide adequate cooling.

Electrical: Local control panel (supplies both cameras) has total electrical load of approximately 15 watts, mains supply of 110/115 or 220/240 volts is required. Cameras operate from 12 volts DC

Provisional information, March 2014.