IVF/ART Series

Laminar Flow Cabinets

CLYDE-APAC

Applications

IVF/ART procedures for human and animal reproduction require a controlled work environment. Ultra-clean conditions are required to minimise microbial contamination in the aseptic handling of gametes and embryos. A warmed work surface is necessary to prevent thermal shock and, in most applications, provision for use of a microscope within the work zone is required. Clyde-Apac's IVF Series laminar airflow cabinets satisfy these requirements.

Description

IVF Series cabinets are laminar flow workstations that are available with work zone width of 90cm, 120cm or 180cm. Internal work height of 80 cm allows effective and comfortable use of a wide range of stereo microscopes.The standard configuration supplied is a cabinet with a special floor stand, and this is the preferred arrangement. An optional configuration for installation on a normal laboratory bench is available, but this increases the internal work height to a point that may compromise ergonomics.

Heated panels under the stainless steel work surface maintain a temperature of 37.5°C with uniformity within 1°C. The entire work surface is heated except for the perimeter, with markings to delineate the heated area.

A digital display mounted on the cabinet control panel indicates the temperature, and an audible alarm signifies any over-temperature condition. A penetration in the work surface and a window for transmitted light allow fitting of a specific stereo microscope that is provided by the cabinet user. The transmitted light source and transformer are located underneath the work surface*. Typically, the microscope penetration is located in the centre of the work zone with alternative locations on the left or right hand side.The user may provide a separate transparent heated stage over the light source.

Air cleanliness in the work zone is Class 3.5 (Class 100) and each cabinet is factory-tested and certified by a NATA-registered laboratory to establish compliance with the performance requirements of AS 1386, Part 5.

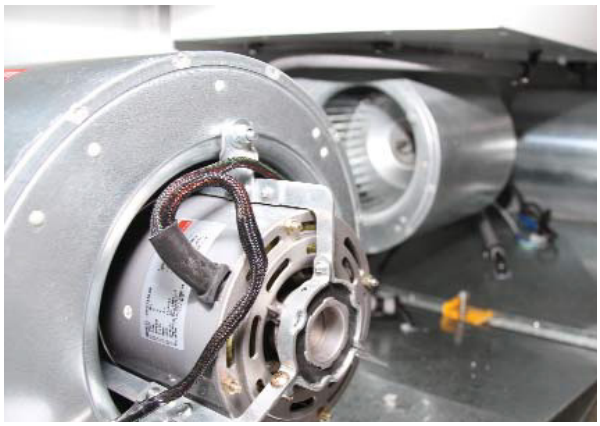
bsi. ISO 9001:2015 Quality Management

AES Environmental maintains an ISO 9001:2015 quality management system to ensure process and product conformance.

Construction

Cabinet

The housing is constructed in electro-galvanised steel, etch-primed and finished in special baked enamel that has been developed for laboratory equipment.The work zone is constructed in Grade 304 stainless steel, with safety glass side panels and front viewing window. A removable, washable metal screen protects the HEPA filter from mechanical damage.



Fans

A direct-drive fan is regulated by a speed controller to enable airflow to be maintained through filter life. Fans and filter plenums are designed to provide ultra-quiet operation and low vibration level.

HEPA Filters

Clyde-Apac Microseal™ HEPA filters, which are certified by Quality Assurance Services under Licence No. 2515 to carry the SAA Standards Mark for compliance with AS 4260. Each filter is individually certified to achieve efficiency of not less than 99.995% to the stringent BS 3928 Sodium Flame test, and to be leak-free in accordance with AS 1807.6. Testing is conducted in a NATA-registered factory laboratory and a NATA-endorsed test label, being an extract of the test report, is affixed to each filter. The positive-pressure filter seal is surrounded by a negative pressure zone, thus enhancing the reliability of the filter installation.

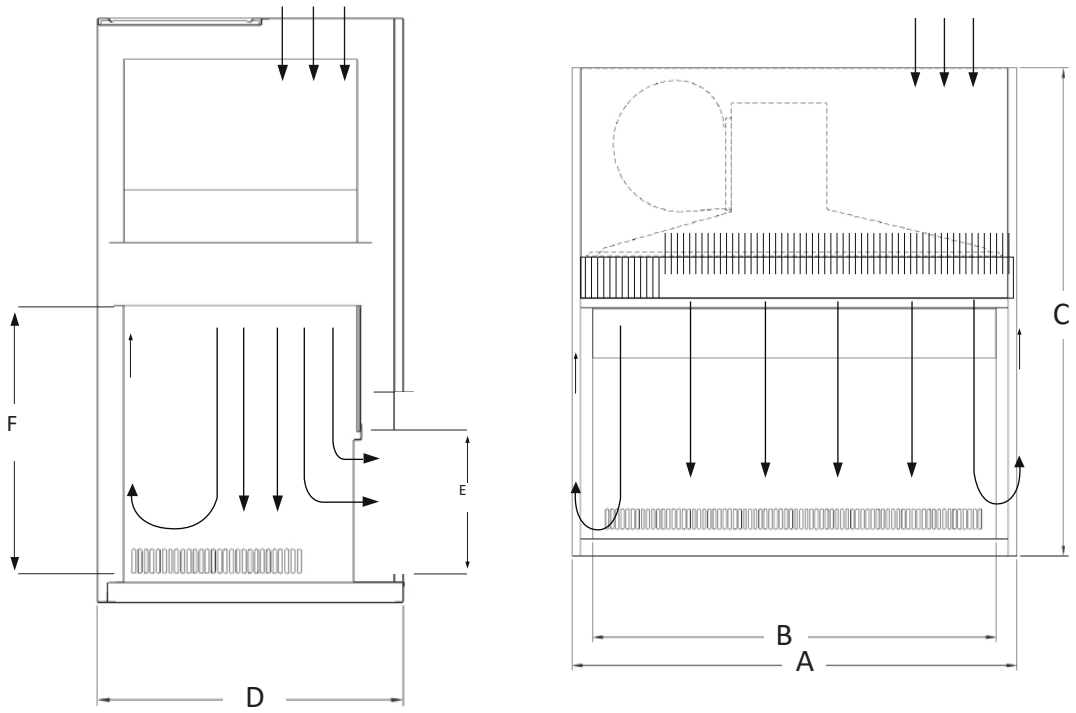
Prefilters

An easily accessed, washable prefilter arrests not less than 90% of particles 5 micron and larger, thus prolonging HEPA filter life. A warning light in the control panel signals the need for prefilter service.

Electrical

Cabinets operate on single-phase 240V, 50 Hz power via a 10A outlet. Alternative electrical specification is available for export requirements.A low voltage touch control panel is located on the front of the cabinet with the status of all switched functions indicated by LEDs. An integral fluorescent lamp housing reduces heat build-up near the operator. Glare-free lamps provide a minimum lighting intensity of 800 lux at the work floor. The electrical system complies with Australian Standard AS 3100.

Operation



Physical Data (mm)

MODEL	A	B	C	D	E	F	KG
IVF 90	1000	880	1420	712	550	690	150
IVF 120	1340	1180	1420	712	550	690	200
IVF 180	1962	1800	1420	712	550	690	270

Vertical laminar flow in the work zone creates a biologically clean, particle-free work environment. A direct-drive fan draws in ambient air through a prefilter on the top of the cabinet and supplies it to the work zone through a HEPA filter. The average vertical air velocity in the work zone is maintained between 0.4 and 0.5 m/s, with all velocity readings within 20% of their average.

Air leaving the work zone is divided into two portions. Part of the airflow leaves through the work opening, with the balance recirculated to the fan/ HEPA filter system via perforations in the lower section of the work zone. This reduces turbulence in the work zone, and extends HEPA filter service life.

Accessories & Options

- Wheels fitted to floor stand
- Bench-mount cabinet configuration (work height is increased)
- Coloured fluorescent lighting, e.g. yellow
- Separate power outlet for microscope light source
- Gas flowmeters with regulating valve (specify number of meters required)
- Incubator gassing hood, stainless steel
- Warming blocks for follicular-fluid and culture tubes (with or without integral heating element)
- Warming blocks for culture dishes

Standard Features

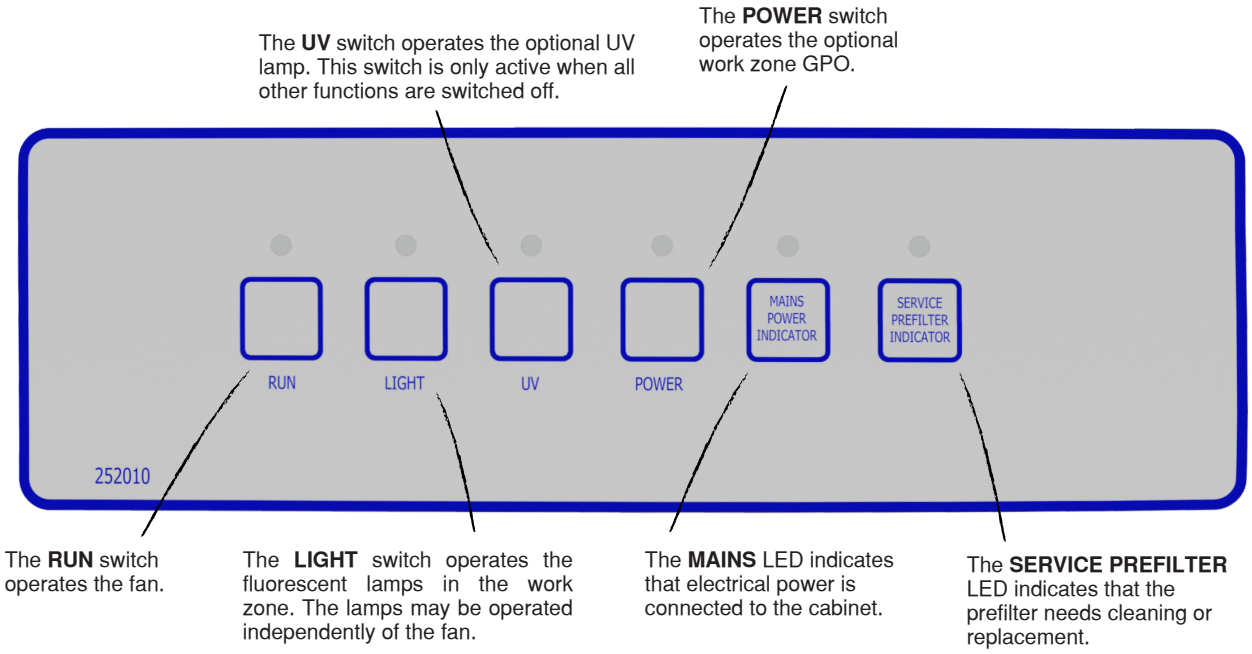
- Heated work surface including electronic controller and digital display
- Mounting frame for light source and transformer
- Window for transmitted light
- Stainless steel work zone
- Partial airflow recirculation
- Low voltage touch controls
- Glare-free fluorescent lighting
- Prefilter service indicator

Customer specification when ordering

The following information is required when ordering a cabinet:

- The cabinet model (size)
- The location of the microscope penetration in the work surface - centre, RHS or LHS
- A full description of the specific microscope and light source (brand and model) that will be used and
- Details of any accessories required

Controls



IVF Series cabinets are fitted with a low-voltage, touch-control panel to operate standard cabinet functions a general purpose power outlet (GPO) and ultraviolet (UV) lamp.

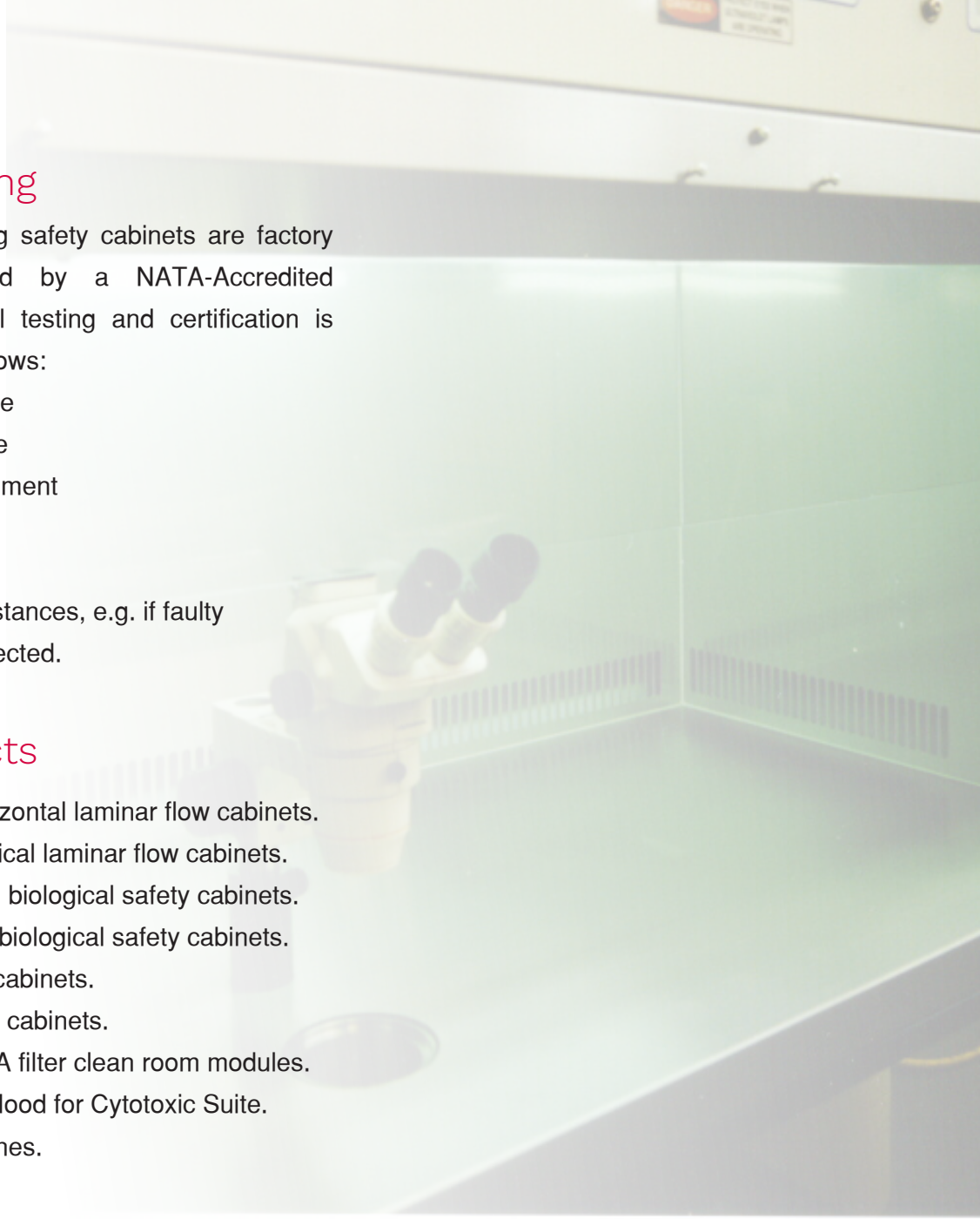
Light-emitting diodes (LEDs) indicate the status of switchable functions, the prefilter and mains electrical power.

Switches are of the membrane type with a toggle action. A momentary touch on the switch pad will switch the selected function on or off.

Personnel Protection

WARNING

IVF cabinets provide protection for products or experiments, but do not protect personnel from aerosols of hazardous materials that may be handled in the cabinet. For applications where personnel protection is required, Clyde-Apac BH2000 Class II biological safety cabinets should be considered.



On-Site Testing

Cytotoxic drug safety cabinets are factory tested and certified by a NATA-Accredited laboratory. Additional testing and certification is recommended as follows:

- On site prior to use
- After maintenance
- After filter replacement
- After re-location
- At least annually
- In special circumstances, e.g. if faulty operation is suspected.

Other Products

- HWS Series™ horizontal laminar flow cabinets.
- VWS Series™ vertical laminar flow cabinets.
- BSC2000™ Class I biological safety cabinets.
- BH2000™ Class II biological safety cabinets.
- PCR laminar flow cabinets.
- Recirculating fume cabinets.
- TFP™ Series HEPA filter clean room modules.
- Exhaust Capture Hood for Cytotoxic Suite.
- Pass through hatches.

The Company

AES Environmental is an Australian owned manufacturing business producing products under Clyde-Apac, Email Air Handling and Vokes brand names for industries that are as varied as industrial plants, commercial buildings, power stations, food processing, healthcare, science and electronics. AES Environmental considers the Australian Standards as a core component of its product mix and has developed an export market in 25 countries, promoting Australian Standards, engineering and manufacturing solutions. AES Environmental, a trusted manufacturer capable of delivering reliable product solutions to highly-critical applications, where the control of hazardous airborne contamination is often critical to process and personnel.

AES ENVIRONMENTAL

CLYDE-APAC EMAIL AIRHANDLING VOKES Filtration Technology

NATA ACCREDITED FOR TECHNICAL COMPETENCE

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