

ENERGY SAVING COOLING TECHNOLOGY

CLEAN AIR COOL BREEZE QAD230

THE ONLY EVAPORATIVE COOLER
AVAILABLE IN THE UK WITH
PERFORMANCE RESULTS PUBLISHED

TESTS CONDUCTED BY BSRIA*

ENERGY SAVING COOLING:
> 1.3kw motor > carbon trust approved



199816



* BSRIA test report 53152/1, August 2009

Simple Technology *at its most effective*

Why Evaporative cooling?

- can lower internal temp of 360m2 by up to 16°C
- very low capital, install and running cost
- environmentally friendly, no CFCs
- filters out airbourne contaminants
- constant flow of naturally cooled 100% fresh air
- can be used with doors and windows open
- approx. 80% less power consumption than air con
- easy installation and spot cooling capability
- quiet operation



Cool Breeze QAD230: factors determining performance

FAN MOTOR



Manufactured by Techo Australia. The motor features quality Japanese bearings with ultra high temperature grease with a protected bearing life in excess of 30,000 hours. The overall motor service life is projected to be in excess of 10 years, based on average annual usage. Mounting the motor after the fan blade ensures the highest air velocity over the motor. This maximises cooling and prevents moisture.

FAN DUTY



The QAD230 features a unique powerflow fan with "golf ball" dimpled blades which increases fan efficiency and air flow. At typical velocities of 1.7m/sec, the pressure drop through the Cool Breeze cellulose pads is 20Pa. The QAD230 is the only evaporative cooler available in the UK with published BSRIA test results. The fan curve shows a flat rate of 0Pa with all pads in place.

CELLULOSE PADS



The QAD230 utilises a long-life, self supporting cellulose pad, impregnated with anti-rot salts, rigidifying saturates and wetting agents, with unique alternating, transverse flutes at different angles. The design creates highly turbulent mixing between cooling water and air, enhancing evaporative efficiency and thus cooling results. Additionally the pads filter out particles as small as 10 microns, including most common allergens. Tests conducted by US Air Filter Test Laboratories in accordance with ASHRAE Standard 52-76 (dust spot efficiency test) found the largest percentage of upstream particles were less than 0.5 microns in size.

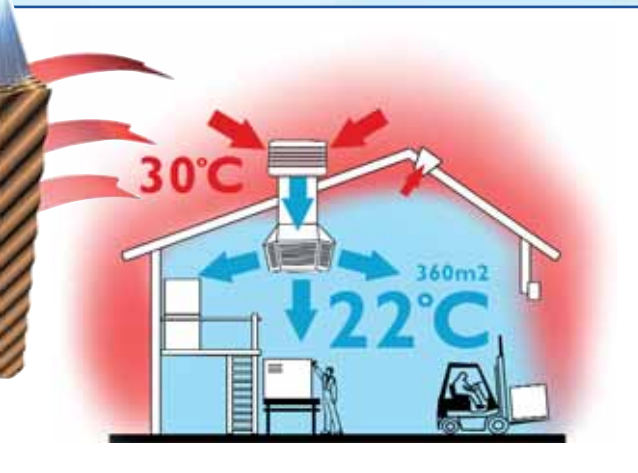
SYSTEM CONTROL



The new Cool Breeze control system gives industry-leading system management.

Features of the new controller include:

- operator friendly
- fault diagnosis (water, pump etc)
- optional remote shutdown via BMS
- optional remote shutdown via timer
- optional humidity control



Case study: Office

Problem: A factory mezzanine office with no fresh air. Both extremely hot and dusty. **Solution:** 2 x QAD230 units providing cooled air to the void above ceiling with grilles providing air into office. **Feedback:** Amazed at the difference this fresh cooled air has made. The office environment has improved beyond recognition.

Case study: Warehouse

Problem: High racking, constant opening and closing of doors the area suffered with unbearable temperatures. **Solution:** 6 x QAD230 coolers were installed in the warehouse area. Each unit providing some 360m² of cooled air. **Feedback:** The area has been transformed. Improved staff morale. Roll out programme to second warehouse has now been brought forward.

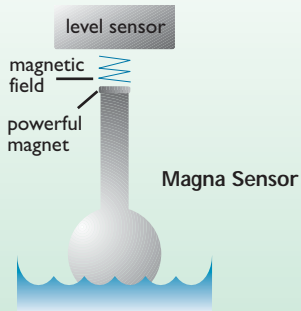
Case study: Production

Problem: Excessive heat from presses required a solution to resolve both heat and create a positive pressure to avoid dust etc. **Solution:** 3 x QAD230 evaporative coolers were positioned in the production area. Air was discharged via 8 way plenums to give even cover of cooling. **Feedback:** 'Smooth installation. Our expectations have been exceeded and we have already recommended this system to others'.

Case study: Data Centre

Problem: Data centre cooling demand has increased substantially over recent years creating a need for increased cooling capacity and greater efficiencies. **Solution:** Evaporative coolers are now considered alternative technology to air conditioning. **Feedback:** Energy savings of over 80% are seen in comparison to traditional air conditioning technology.

WATER MANAGEMENT



Electronic regulation of water level by measurement of 'magnetic hall effect' gives a consistent water level accurate to within 1mm. No adjustment required, no rubber washers to wear or probes to corrode. The computer controlled water management system with patented Magna Sensor drain valve is vastly superior in performance, reliability and maintenance-free long life. It uses the simple counterweight principle of a tank of water and leverage to open and close the valve. There is virtually nothing to break or wear. The Magna Sensor valve uses a magnetic field principle to determine water level. It never needs adjusting. No Magna Sensor installed by Cool Breeze has ever failed.

BUILD



The QAD230 housing, internal mouldings and sump are made from advanced BSF Luran-S Polymer material which is super strong, impact resistant, UV stable and totally corrosion free.

Key Features:

- > direct axial flow fan system
- > pre-start wash of pads
- > after use auto rinse cycle
- > end of cycle drain
- > adjustable water change
- > gravity drain valve
- > exhaust mode
- > 11 litre sump
- > durable polymer construction
- > powerflow fan
- > magna-sensor auto water level
- > water management system

How evaporative cooling works

Air is blown over water held in saturated cellulose pads. As it evaporates it absorbs heat which is carried away and so the surrounding temperature falls. The temperature of air is reduced proportionally to the amount of evaporation that takes place, with a maximum theoretical dry bulb reduction equivalent to the difference between prevailing wet and dry bulb temperatures.

Clean Air Group

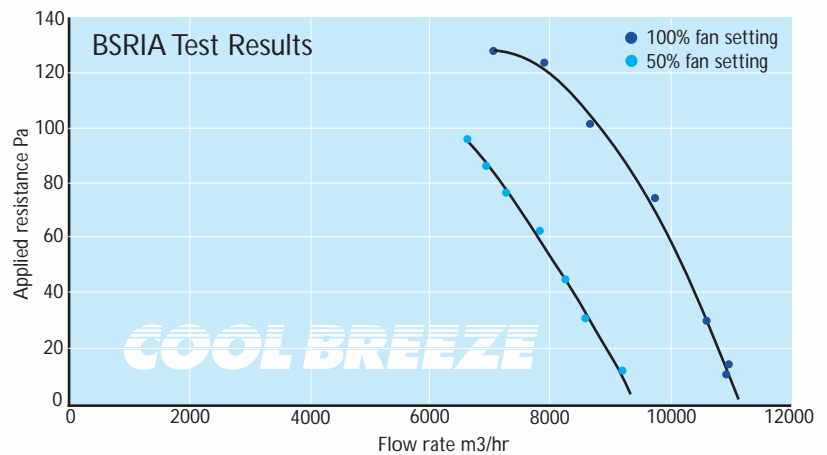
Clean Air Group are sole UK distributors of Cool Breeze, manufactured by AirGroup one of Australia's largest manufacturers of evaporative cooling units. For over twenty years the Clean Air Group has built a reputation for delivering on their promises. We will help ensure that the investment you make is both cost effective and fit for purpose. We undertake all aspects of each project, including calculations of cooling and heating loads, production of CAD drawings, full project management and pre-install surveys.

Specifications:

QAD230

| | | | |
|----------------------|------------------------------------|-----------------------|---------------|
| Motor | Voltage | | 220-240 |
| | Thermal Overload | | AUTO |
| Watts | Watts High/Low | | 1270/680 |
| | Insulation | | F Class |
| Motor | Amp Draw High/Low | | 5.6/2.9 |
| | RPM High/Low | | 1400/850 |
| Capacitor-uf | | | 30 |
| Fan | Fan | Powerflow Fixed Pitch | YES |
| Pump | Pump | Performance | 26lpm |
| | Thermal Overload | UL certified | YES |
| Insulation | Power at 1mtr head | Amps/Watts | C Class |
| | RPM at 1mtr head | | .37/66 |
| | | | 2550 |
| Water | Inlet Connection | | 1/2" BSP |
| | Drain | | 19mm/40mm |
| Tank Capacity | Litres | | 10-12 ltrs |
| | Water Level | | Magna Sensor |
| Performance | Design Air Flow | m3/hour | 11000 |
| | Calculated with all pads installed | | |
| Performance Capacity | Kw (Cooling) | | 15 |
| | | | |
| Dimensions | Size | Depth/Width | 1090x1090 |
| | Height | | 850 |
| Weight | Weight | Dropper Size | 550x550 |
| | Weight | Shipping kg | 56.5 |
| | | Operating kg | 69 |
| Filter Media | Celdek | | 4 |
| | No. of Pads | | |
| Size | Height/Width/Depth | | 830/650/100mm |
| | | | |
| Noise | dBA | Measured at 1m High | 65dBA |
| | | Measured at 1m Low | 53dBA |

QAD230 Applied resistance vs flow rate



our promise
the right solution
installed on time
without disruption
and within budget

CLEAN AIR GROUP

tel: 0800 0266 383 • www.cleanair.co.uk • info@cleanair.co.uk
Newton Close • Drayton Fields • Daventry • Northants NN11 8RR