

Diamond light source synchrotron facility

GreenTech EC centrifugal fan - RadiCal



Technical Data

Stulz product	
Air volume (total)	
Fan static pressure	
Fan input power	
Amount of units	
Amount of fans	
ebm-papst product	

Application

27×	CCD900CW chilled water CRAC
m³/h	20,000
Pa	400
kW	4.88
	27
	54
54×	R3G560-RB32-01 (x frame and metal slanted POD)

Project



One of the UK's leading scientific organisations dramatically reduced their cooling energy consumption, by simply upgrading their existing air-conditioning equipment to use ebm-papst GreenTech EC fans. Stulz requested ebm-papst UK to carry out a site survey for upgrading some of their computer room air conditioners. Normally this type of unit is used for datacentre cooling but in this case the equipment was being used to cool electronic equipment rooms around the perimeter of the Diamond Light Source synchrotron in Didcot.

The customer commented:

"As a Scientific organisation, the project appealed to us on several levels. Obviously the financial savings from reduced energy consumption and increased reliability were of great importance. Other key benefits from the modifications ebm-papst offered, were the reduction in both noise and vibration. These can affect our operations significantly. Following the change of fans, one operator stated he now had to give a unit the 'cuddle test' to confirm the unit was running following the significant reduction in noise and vibration!"



The project was to upgrade 27× CCD900CW Stulz downflow CRAC units from their traditional AC forward curved centrifugal blowers to EC backward curved impellers.

The successful completion of the EC upgrade has led to a 55 % energy saving and an annual carbon reduction of 46 tonnes, from the original AC fans, bringing a £ 32k energy saving per annum¹⁾ as well as significantly reducing noise and vibration from the units being transmitted into other parts of the building and reducing maintenance costs on the units going forward.

Phase 2 of the project, to convert the remaining Stulz cooling units is scheduled for upgrade at the next shutdown period.





Advantages/Benefits ebm-papst product

As well as the significant **energy saving** achieved by converting to GreenTech EC fans, other benefits also came out of the conversion which proved to be as important for the customer. Due to the sensitivity of the equipment being used in the Synchrotron, **improvements in noise and vibration** from using EC fans was also an advantage.

The other benefits from the upgrade include:

- Extended fan life
- Extended unit life
- Reduced maintenance no belts
- Reduced maintenance contract with supplier
- No belt dust being blown into the equipment rooms
- Controllability of cooling capacity
- Greater flexibility for capacity management



www.ebmpapst.com