



Energy Technology List

Product application checklist

Please complete in BLOCK CAPITALS

Active Chilled Beams

Manufacturer/supplier name:

Applicant's name:

Telephone number:

Product information

Product name:

Model number:

Please complete each section of this form based on your product's characteristics. Incomplete or incorrect data could affect the processing of your product application.

Each product application should be made on a separate form unless a product's design characteristics are common to all the products. In this instance a single application can be made for multiple products.

1. Product testing and certification

No Yes

Where type testing has been applied to demonstrate product performance please ensure that the information supplied is sufficient to demonstrate the performance of all the products for which applications are being made.

1.1 Has the product been tested in accordance with the following standards and in accordance with the operating conditions specified in the ETL Criteria for the product (refer to ETL Criteria as well as section '4. Product performance' below)

a) BS EN 15116:2008 – "Testing and rating of Active Chilled Beams"

1.2 How was the product(s) performance tested? (Please select one)

- a) Tested in the manufacturer's in-house laboratory, in accordance with a registered Quality Management System and a representative sample of the test data has been cross-checked and verified by an independent body (i.e. 'self-tested and verified or cross-checked by an independent body')
- b) Tested in a laboratory either in house or on-site, witnessed by an independent body (i.e. 'witnessed testing')
- c) Tested by an independent laboratory (i.e. 'independent testing')
- d) Representative testing

Please refer to Section 2 of ETL Guidance Note 5 "ETL Testing Programme: Energy Technology List (ETL) Product Testing Framework" for details of the requirements that must be satisfied for each of these product.

1.3 Where product testing has been done in accordance with a registered Quality Management System, what is its registration number?

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1.4 Where a representative sample of the test data has been cross-checked and verified by an independent body:

a) What is the name of the independent laboratory?

.....

b) What is the laboratory's registration number (where accredited)?

.....

1.	Product testing and certification (continued)	No	Yes																		
1.5	<p>Where product testing has been witnessed by an independent body, what was the name of the witness? <i>(Please include contact details)</i></p> <p>_____</p>																				
1.6	<p>Where products have been tested by an independent laboratory:</p> <p>a) What is the name of independent laboratory?</p> <p>_____</p> <p>b) What is the laboratory’s registration number (where accredited)?</p> <p>_____</p>																				
1.7	<p>If representative testing has been used, what are the ‘representative models’?</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: center;">ETL Product ID number</th> <th style="width: 50%; text-align: center;">Product name and model number</th> </tr> </thead> <tbody> <tr><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td></tr> <tr><td>_____</td><td>_____</td></tr> </tbody> </table> <p><i>The representative models must be selected by dividing the range of products into groups of models with similar design characteristics, and testing a model in each group. The performance of each model in the group must be predicted using a validated mathematical model. As a minimum, at least two models must be tested in each range of products.</i></p>			ETL Product ID number	Product name and model number	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
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2.	Product type	No	Yes		
2.1	<p>What category of product are you applying for? (Please select one)</p> <p>2.1.1 Linear Active Beam</p> <p>a) Nominal active beam width ≤ 300mm, 1 Way throw</p> <p>b) Nominal active beam width ≤ 300mm, 2 Way throw</p> <p>c) Nominal active beam width > 300mm and ≤ 600mm, 1 Way throw</p> <p>d) Nominal active beam width > 300mm and ≤ 600mm, 2 Way throw</p> <p>2.1.2 Modular Active Beam</p> <p>e) Nominal active beam size (width x length) 600mm x 600mm, 4 Way throw</p> <p>f) Nominal active beam size (width x length) 600mm x 1200mm, 4 Way throw</p> <p>2.1.3 Bulkhead Active Chilled Beam</p> <p>g) Bulk head unit up to 1500mm (active length)</p>				

3. Product features		No	Yes
3.1	<p>Does the product comply with the following ETL requirements?</p> <ul style="list-style-type: none"> a) Designed to introduce primary ventilation air into the treated space through the beam. b) Designed to operate above the dew point. Any condensate tray fitted should be included as a precautionary measure only, and should have no facility to connect to drainage. c) Does not include any electrical heating elements. d) Does not include an integral fan. 		
3.2	<p>Indicate additional service features/services (eg: heating, lighting, controls, smoke detectors etc...) built in as an integral part of the product, such as in the case of multiservice chilled beams? Please also indicate if these additional features are listed on the ETL or (in the case of unlisted technologies) ETL compliant?</p> <ul style="list-style-type: none"> a) _____ b) _____ c) _____ d) _____ e) _____ f) _____ 		

4.	Product Performance	No	Yes
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- 4.1 Does the product meet the relevant performance thresholds (Minimum Specific Waterside Cooling Capacity) set out in the following “Table 1 for Linear Active Beams” and that in “Table 2 for Modular Active Beams”, when tested to “BS EN 15116:2008 - Testing and rating of Active Chilled Beams” at test conditions specified?

Table 1 Linear Active Chilled Beam Performance Requirements

Nominal Active Beam Width	≤ 300mm		> 300mm and ≤ 600mm	
Air Throw	1 Way	2 Way	1 Way	2 Way
Induction (Nozzle) Pressure (Pa)	≤ 150 Pa	≤ 150 Pa	≤ 150 Pa	≤ 150 Pa
Cooling Coil Pressure Drop (Pw)	≤ 20 kPa	≤ 20 kPa	≤ 20 kPa	≤ 20 kPa
Minimum Specific Waterside Cooling Capacity	≥ 15.0 W/mK	≥ 25.0 W/mK	≥ 20.0 W/mK	≥ 45.0 W/mK

Table 2 Modular Active Chilled Beam Performance Requirements

Nominal Active Beam Size (Active width x Active length)	600mm x 600mm	600mm x 1200mm
Air Throw	4 Way	4 Way
Induction (Nozzle) Pressure (Pa)	≤ 150 Pa	≤ 150 Pa
Cooling Coil Pressure Drop (Pw)	≤ 20 kPa	≤ 20 kPa
Minimum Specific Waterside Cooling Capacity	≥ 45.0 W/K	≥ 40.0 W/K

Table 3 Bulkhead Active Chilled Beam Performance Requirements

Nominal Active Beam Size (Active Length)	Bulkhead unit up to 1500mm
Induction (Nozzle) Pressure (Pa)	≤ 150 Pa
Cooling Coil Pressure Drop (Pw)	≤ 20 kPa
Specific Waterside Cooling Capacity	≥ 40.0 W/mK

Definitions:

- a) Specific Waterside Cooling Capacity = $P_w \div L\Delta\theta$

Where:

P_w = Waterside Cooling Capacity [Watts]

L = Cooling Length [Meters], the Active length of cooling section

$\Delta\theta$ = Temperature Difference between Reference Air Temperature (θ_r) and Mean Cooling Water Temperature (θ_w) i.e. $\Delta\theta = (\theta_r - \theta_w)$ [Kelvin]

- b) Specific waterside cooling capacity in W/mk is the waterside cooling capacity per unit length of beam and per unit temperature difference between the reference room air temperature and the mean chilled water temperature. For modular active chilled beams, the specific waterside cooling capacity is measured for the modular unit in W/K.
- c) Nominal active chilled beam width/dimensions is the size of the active cooling element excluding architectural components that do not affect product cooling performance
- d) ‘≤’ means ‘less than or equal to’, ‘≥’ means ‘greater than or equal to’.
- e) All other terms are as defined in BS EN 15116:2008

For the avoidance of doubt test data should be presented to one decimal place. As an example, a Minimum Specific Waterside Cooling Capacity of 14.9 Watts/mK for a 1 Way throw linear active beam with Nominal Active Width of ≤300 mm would be deemed to be a fail.

5. Summary of documents to be included

No

Yes

Please send ONE copy of each of the following documents:

If the relevant information in support of the questions above is contained within a larger document, please indicate the location of the relevant information. Note that all documentation submitted must directly refer to the model numbers for which you are making this application. Documentation should be added to your online application at https://etl.beis.gov.uk/engetl/fox/live/ETL_LOGIN/login

- a) A technical sales brochure or leaflet for the product clearly summarising:
- i) The key features of the product (ideally including photographs of the product's exterior).
 - ii) The product's operation (i.e. in-built functionality) and intended applications (i.e. usage).
 - iii) Any product selection options (including optional extras, alternative configurations etc.).

This documentation should contain sufficient detail to enable the assessor to confirm that the proposed entry on the energy Technology Product List (ETPL) is correct, and uniquely represents a single product of fixed design (as defined by the rules of the ETL). If the model names contain any 'wildcards' in respect of cosmetic variations please check with ETL Questions that this is permitted before submitting your application.

- b) A technical specification for the product, including:
- i) Details of the model numbers covered (including individual features of each model).
 - ii) The product's design ratings (electrical, mechanical, thermal, flow rates, energy use etc.).
 - iii) A description of how to install the product including connection/wiring diagrams. Where the product must be assembled, configured and/or commissioned on site before use, please include instructions.

This documentation should contain sufficient detail to enable the assessor to confirm that each product entry on the ETPL has the design features specified in the eligibility criteria for that category of product. Please indicate on the checklist where information on specific design features is located in the documentation.

- c) Evidence that the product meets the performance criteria, including:
- i) Test reports showing product performance at the standard rating/test conditions.
 - ii) Details of the test procedures/standards used to determine product performance.
 - iii) A declaration certifying the accuracy of the test reports and confirming that.
 - The test facilities complied with the minimum specifications outlined in the test standard, and the required test conditions, where applied during testing.
 - All measurement equipment used in testing was calibrated by an accredited laboratory, or its calibration is otherwise traceable back to national standards.
 - Appropriate quality assurance procedures have been used to verify or cross-check the accuracy and repeatability of the test procedures and test results.

Please note that summary test reports will only be accepted, where the accuracy of the test reports has been certified by a recognised independent body, or where one detailed test report has been submitted per product range.

Please refer to Section 4 of ETL Guidance Note 5 "ETL Testing Programme: Energy Technology List (ETL) Product Testing Framework" for further guidance on the submission of test results, and minimum information requirements.

- d) Evidence that a quality assurance system/procedures is/are in place to:
- i) Control the specification, design, manufacturing and testing of the products.
- e) Signed application checklist.

Please note that all product documentation provided must be written in, or translated into, English

6. Declaration

I confirm that the information given above is correct to the best of my knowledge and that I have read and agree to the terms and conditions governing the management of the Energy Technology List.
A copy of the terms and conditions can be found at www.gov.uk/guidance/energy-technology-list.

Signature: Date:

For more information:

Web:

<https://etl.beis.gov.uk/>

Phone:

+44 20 3096 4800

Email:

info@etl.beis.gov.uk

Post:

Energy Technology List Coordinator
ICF
Riverscape
3rd Floor 10 Queens Street Place
London
EC4R 1BE

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