



FLOWTECH
Fluid Handling

Alphacel

Series 300 & 400 Lenticular Filter Modules

Alphacel lenticular filter modules provide a sub micronic high flow, high surface area filter in a totally enclosed airtight leak free housing. Alphacel media contains no asbestos and is made to give a precisely controlled degree of filtration in every grade. It has high wet strength from

its specially formulated resin binders and great physical strength by its high grade polypropylene skeleton and polypropylene cover.

A filter system can be designed for any flow rate and rating, meeting the diversified requirements of the wine, beer,

soft drinks, fruit juice and water industries. In addition the special requirements of the pharmaceutical, veterinary, cosmetic and toiletry industries can also be met, with specialist paper medias. Short modules can be made for small batch sizes.

UNIQUE PATENTED DESIGN GIVES ALPHACEL STRENGTH AND DURABILITY



LENTICULAR FILTER MODULES

OPERATION DATA - STANDARD MODULES

LENTICULAR FILTER MODULES

STANDARD MODULES

Data	Series 300	Series 400
No of cells	16	16
Module size	300mm O/D (12") x 50mm I/D x 275 mm high	400mm O/D (16") x 50mm I/D x 275 mm high
Surface area	1.8m ²	3.6m ²
Max. operating temp. intermittent	121°C	121°C
Working temperature continuous	80°C	80°C
Maximum allowable diff. pressure	2.5 Bar	2.5 Bar
Flow rates	See graphs	See graphs
pH operating range	4 to 10	4 to 10
Material		
Paper media	4 mm Alpha grade cellulose and Diatomaceous Earth	
Support Skeleton	Natural Polypropylene to FDA 21. CPR 15/20	
Metal Straps	A240G316 Stainless Steel	
Gaskets	Silicone Rubber	
Cover	Reinforced Polypropylene Scrim	
Packing		
No. per box	2 per box	1 per box
Weights & Dimensions	11 Kgs 60 x 32 x 31 cms	11Kgs 43 x 43 x 31 cms
Labelling	On each box and module.	On each box and module.
Shelf Life	5 years if kept dry at room temperature.	5 years if kept dry at room temperature.

QUALITY ASSURANCE

Flowtech has been assessed by Lloyds Register of Quality Assurance and approved to BS.EN.ISO 9001. 1994. Reg. No. 933931.

PRODUCT PARAMETERS

Each batch of media received is tested within specified limits according to its grade for:

- a Air permeability
- b Water permeability at 20°C
- c Thickness weight and density

In addition each module is inspected during and after manufacture for faults and dimensional accuracy. An inspector's identity is attached to each module for traceability.

FEATURES

Alphacel has unique patented design features. These give Alphacel strength and durability in use.

1. **Beaded Edge.** This polypropylene injected edge encapsulates the media and separator together giving each cell great resistance to warping and preventing module disintegration on removal after use.
2. **Media Migration Discs.** Fitted to the individual media discs these prevent abraded fibres of the media entering the filtrate as it exits the module. Media Migration Discs also prevent module from shortening when wet.
3. **Cover.** A reinforced polypropylene scrim cover is fitted to both sides of one cell imparting strengthened preventing damage when wet, allowing hosing down. Scrim covering allows moderate low pressure backflush cleaning by giving media support in reverse flow conditions.
4. **Label.** Each module is fitted with a compatible label which may be left on in use, giving a useful check when re-fitting new modules.

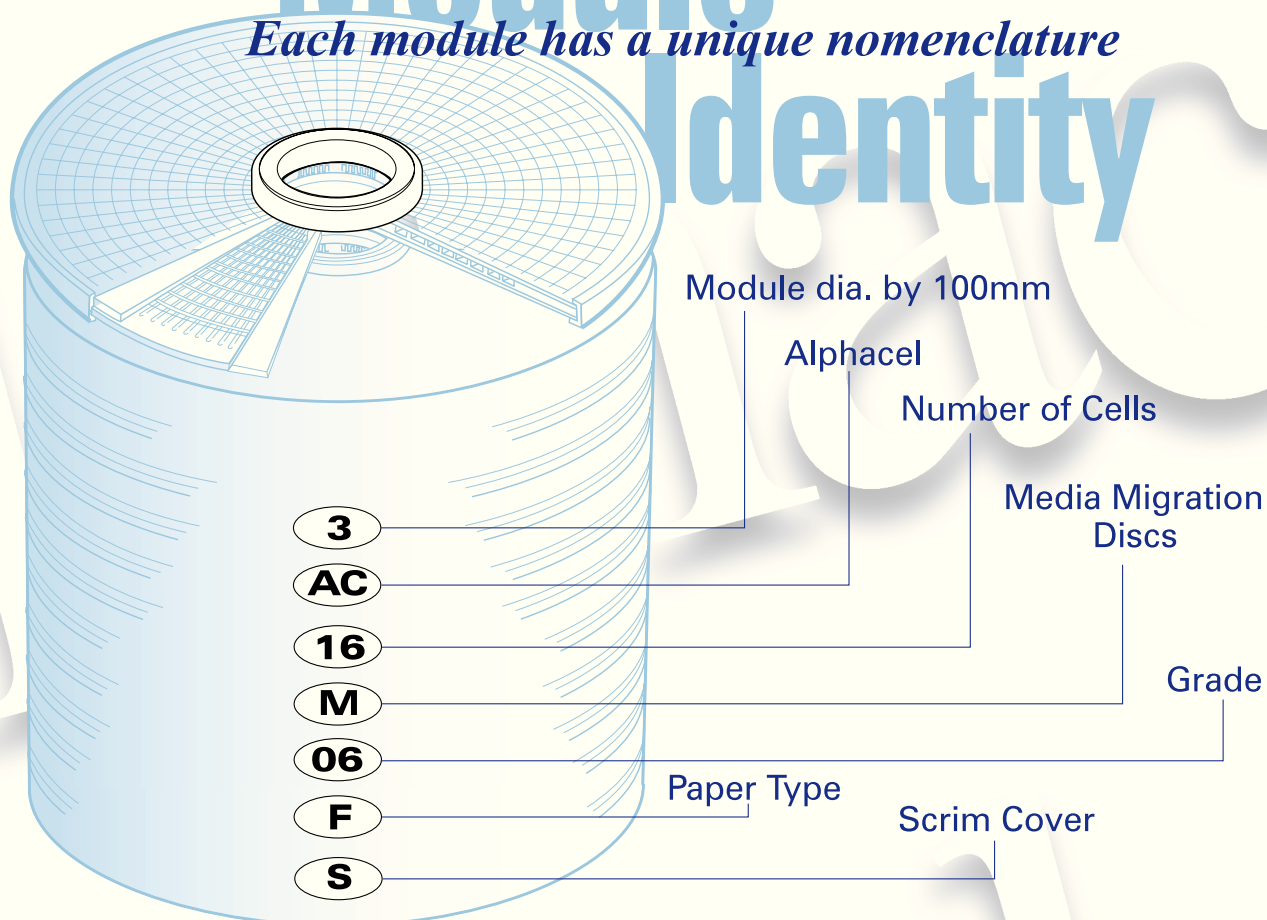
Grades	Microns	
01	10 - 25	Primary Grades
02	4 - 9	
03	1.5 - 3	Clarifying Grades
04	0.6 - 1.5	
05	0.5 - 0.8	
06	0.4 - 0.6	Sterilising Grades
08	0.2 - 0.4	
09	0.05 - 0.2	

GRADES

Each grade of Alphacel covers a narrow band of micron ratings, giving total coverage from 0.05 micron to 25 microns.

Module Identity

Each module has a unique nomenclature



USE OF MODULES

STERILISATION

Modules, singly or assembled in a housing, may be sterilised as follows:

1. By Autoclave held at 121°C for twenty minutes.
2. In line steaming using 1 bar steam at 121°C for twenty minutes through closed housings.
3. Chemicals. Not generally recommended, however if this method is employed then a non oxidising sterilant should be used, e.g. formaldehyde.

RINSE PROCEDURES

A pre-rinse of an assembly (housing and modules) using high purity water is recommended to remove surface tension, air and foreign particles.

Cold Water: Once through the system, 100 litres per module.

Hot Water: Recirculated at 80°C at 20 litres/module for 30 minutes.

Where water is not compatible with the product to be filtered use either an acceptable solvent or filtered product recirculated several times.

EXTRACTABLES IN PPM

ION	EXTRACTION LIQUID				
	Citric Acid 5%	HCl 5%	Water	Acetic Acid 5%	Na Cl.Soln. 0.9%
Na	37			140	
Ca	2000	1300	311	1300	507
Mg	20		53		
K	6	26			
Fe	1.6	25		25	<0.6
Zn		16-25			<0.3
Pb		1.2-2.8			<3
Cd		<0.3			<0.3
Al					<6
As		<0.5			<6
Hg		<0.5			
Cu					<0.6

TOTAL EXTRACTABLES

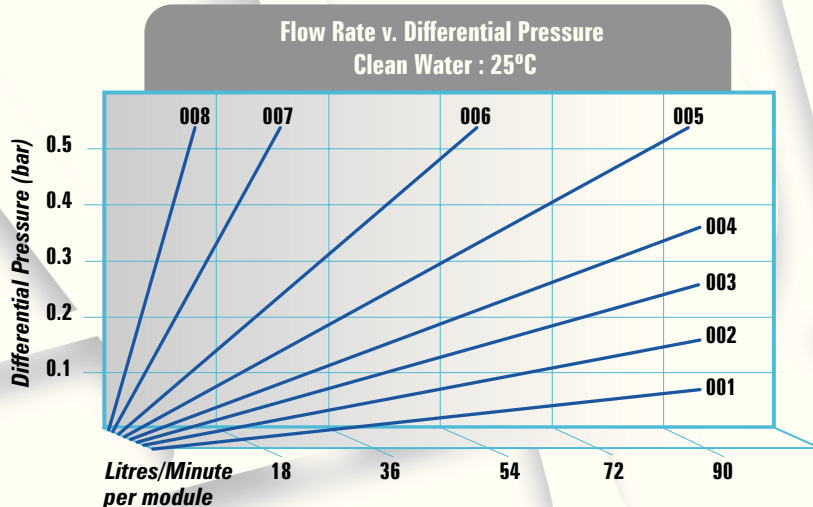
Deionised water at 37°C <0.2%
Deionised water at 62°C <0.3%
Deionised water at 100°C <0.4%
Deionised water at reflux <0.6%
n - hexane <0.2%

Acetic Acid 5% reflux <0.7%
Ethanol 8% reflux <0.3%
Ethanol 50% reflux <0.4%
Ethanol 95% reflux <0.7%

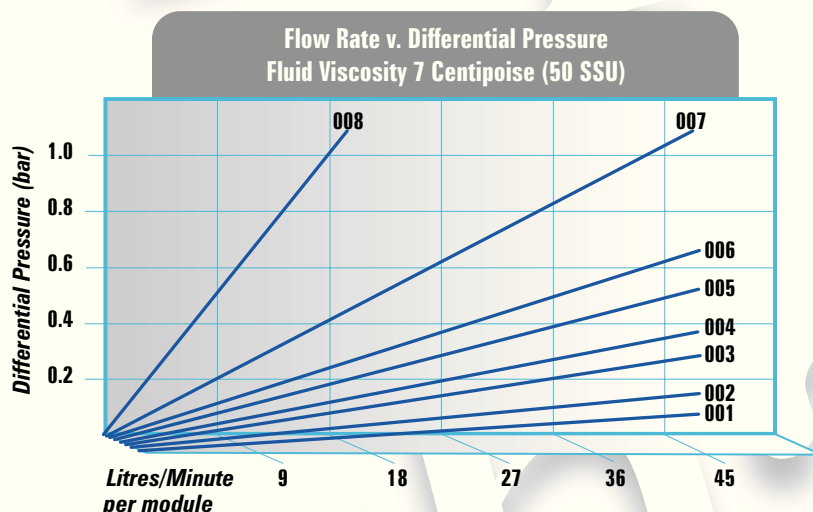


LENTICULAR FILTER MODULES

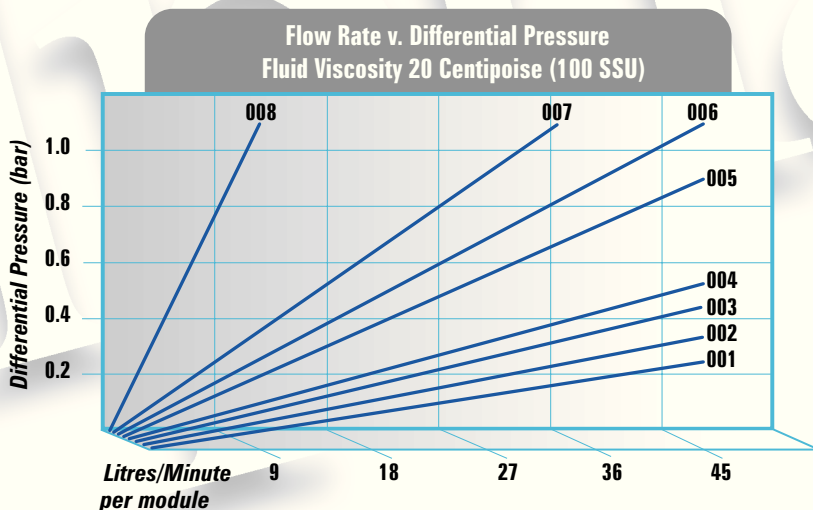
SERIES 300 FLOW RATE -V- DIFFERENTIAL PRESSURE



Alphacel exhibits a very high flowrate per cartridge, greater than the same area of media mounted in a filter press. This is due to the open nature of the media support within the cartridge cell, and the cell's ability to stand a high pressure differential without rupture.



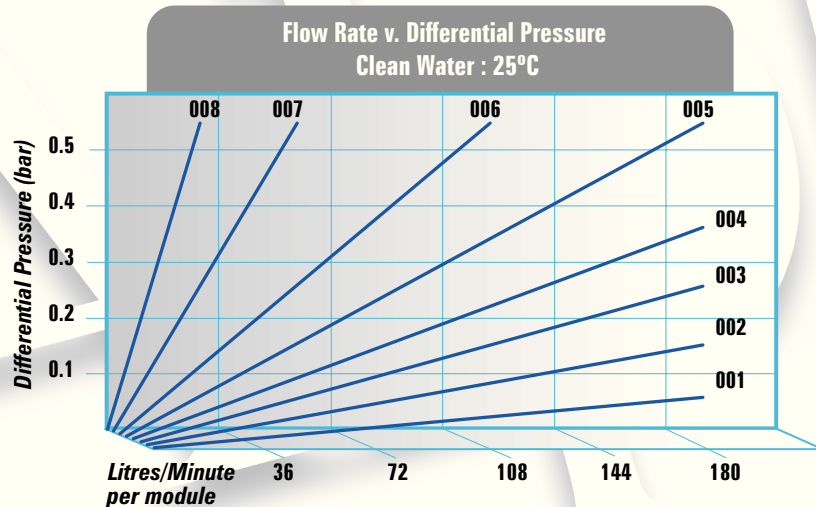
Still exhibiting a high flowrate per unit area Alphacel can be used for clarifying any type of spirit, solvent or light oil fraction, particularly useful in the distilling industry and petrochemicals.



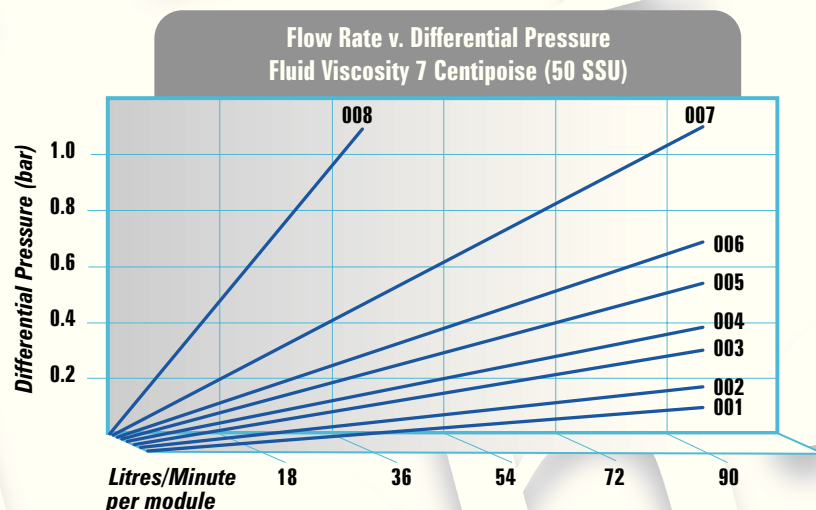
Even with comparatively viscose liquids Alphacel can still be used with the utmost safety and reliability. The higher pressures necessary to achieve a flowrate through paper media are safely withstood, and Alphacel's totally enclosed housing ensures that there is no wastage through leakage under these higher pressures.

LENTICULAR FILTER MODULES

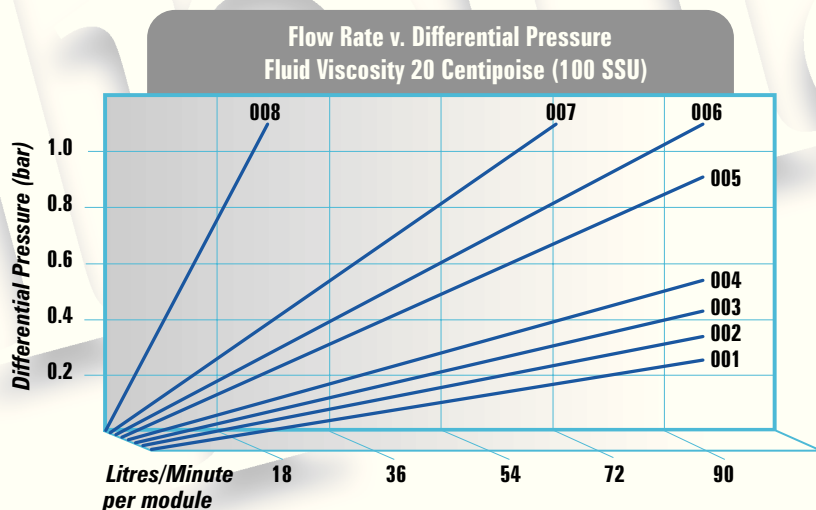
SERIES 400 FLOW RATE -v- DIFFERENTIAL PRESSURE



Alphacel exhibits a very high flowrate per cartridge, greater than the same area of media mounted in a filter press. This is due to the open nature of the media support within the cartridge cell, and the cell's ability to stand a high pressure differential without rupture.



Still exhibiting a high flowrate per unit area, Alphacel can be used for clarifying any type of spirit, solvent or light oil fraction, particularly useful in the distilling industry and petrochemicals.



Even with comparatively viscose liquids Alphacel can still be used with the utmost safety and reliability. The higher pressures necessary to achieve a flowrate through paper media are safely withstood, and Alphacel's totally enclosed housing ensures that there is no wastage through leakage under these higher pressures.

LENTICULAR FILTER MODULES

ALPHACEL CARBON MODULES

Alphacel carbon lenticular filter modules are available in two basic grades of carbon type.

Proc 3 style utilising a Darco 551 carbon is

used for general colour removal and chlorine reduction whilst the CN3 uses a Norit material which is a decolouring carbon particularly suitable for use in the

pharmaceutical and beverage industries. Other speciality carbon grades may be manufactured to special order.

STANDARD MODULES

Data	3AC16MOCS-PROC3 and 3AC16MOCS-CN3	4AC16MOCS-PROC3 and 4AC16MOCS-CN3
No of cells	16	16
Module size	300mm O/D (12") x 50mm I/D x 275 mm high	400mm O/D (16") x 50mm I/D x 275 mm high
Surface area	1.8m ²	3.6m ²
Carbon weight	900gms	1800gms
Max. operating temp. intermittent	121°C	121°C
Working temperature continuous	80°C	80°C
Maximum allowable diff. pressure	2.5 Bar	2.5 Bar
Flow rates	See graphs (as O2 grade Alphacel)	See graphs (as O2 grade Alphacel)
pH operating range	4 to 10	4 to 10
Material		
Carbon Type	Darco S51 or Norit CN3	
Paper media	4 mm Alpha grade cellulose and Diatomaceous Earth	
Support Skeleton	Natural Polypropylene to FDA 21. CFR 15/20	
Metal Straps	A240G316 Stainless Steel	
Gaskets	Silicone Rubber	
Cover	Reinforced Polypropylene Scrim	
Packing		
No. per box	2 per box	1 per box
Weights & Dimensions	11 Kgs 60 x 32 x 31 cms	11Kgs 43 x 43 x 31 cms
Labelling	On each box and module.	On each box and module.
Shelf Life	5 years if kept dry at room temperature.	5 years if kept dry at room temperature.

EXTRACTABLES IN PPM

			PROC 3		CN3	
Extraction Liquid	N/100 HCl	Typical	Maximum		Typical	Maximum
Ion	Cu	7.6	12.0		7.6	12.0
	Mg		1.2	4.0	1.2	4.0
	Fe		1.4	3.0	1.4	3.0
Ash content	11-19/o					

FLOWTECH
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Gresham Way, Reading,
Berkshire RG30 6AW UK
Telephone: +44 (0)118 941 3121
Fax: +44 (0)118 943 1221
Email: filtration@flowtechfh.com
Website: www.flowtechfh.com

