

# VOKES

Filtration Technology

## Univee® 3 & 320 multipocket bag filters

### INTRODUCTION

The VOKES Univee 3 range of multipocket bag filters combine a high dust holding capacity with long service life, to provide an economic solution to high efficiency air filtration in commercial HVAC applications. Fully performance tested for efficiency in VOKES laboratories to BS 6540 Pt. 1 (EUROVENT 4/5, ASHRAE 52-76) and confirmed by the results of independent test authorities, they are graded EU8–EU5 within their respective Rated Air Flow Range. Univee 3 bag filters are designed for use in air handling units and air conditioning systems which have separate pre-filters or where multi-layer type bags are not suitable.

### CONSTRUCTION

Each bag is manufactured from a layer of media to the specified filtration performance and a backing material. The first provides fine filtration, while the second prevents fibre migration.

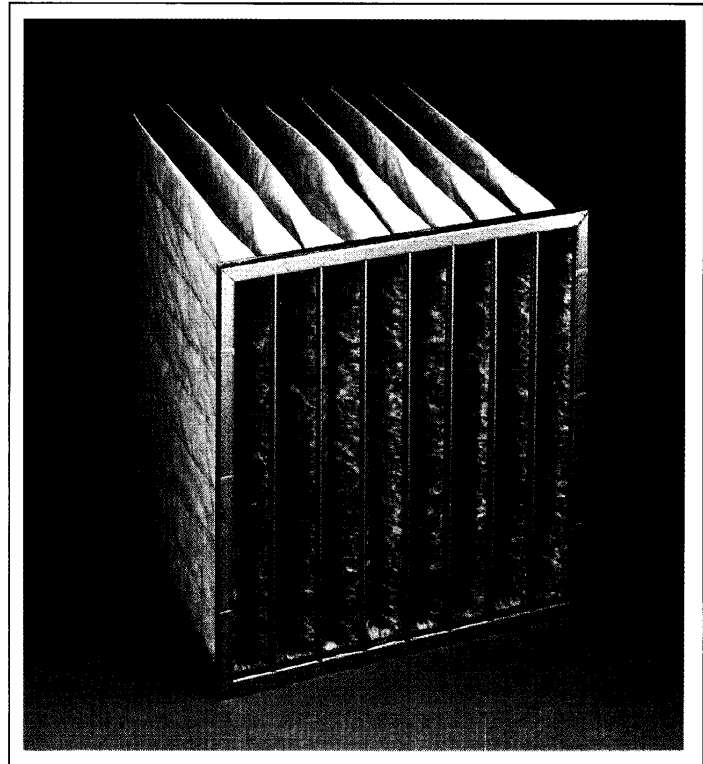
The Univee 3 pocket is designed for the efficient flow of air through the pocket, providing minimal resistance, while optimising the dust holding capacity. This is achieved by using a specially designed stitching pattern which controls the inflation of the pocket, maximises the media area exposed to the air flow and ensures an even dust loading. To avoid the risk of leakage, the stitching pattern across the pocket is sealed with an adhesive and particular care is given to the over edge stitching.

Each pocket is attached to a supporting frame which is held to adjacent pockets with locking strips. Assembled into a 'U' form galvanised steel header, the assembled pockets provide a rigid and robust filter.

**Fire Resistant Bags** – Although standard Univee 3 bag filters have limited fire resistance, Univee 320 bag filters are inherently non-flammable and if ignited will generate minimal smoke and toxic gases. Univee 320 filters have been tested for compliance with the flammability requirements of BS 5588 Part 9: 1989 Code of Practice for Ventilation and Air Conditioning Ductwork.

### RANGE

Univee 3 bags are available in four grades 90/95% (EU8), 80/90% (EU7), 60/80% (EU6) and 40/60% (EU5), colour coded for ease of recognition. Each grade is available in three standard sizes to fit 610 x 610, 610 x 508 and 610 x 305 mm frames, with either 25 or 20 mm headers. For new installations where filter frames are required, Univee 3 bags with 25 mm headers are recommended, to suit the VOKES range of filter frames. Depending on the specified air flow and the space available, bags can be provided with different combinations of pocket length and number of pockets.



### FILTER FRAMES

VOKES has a comprehensive range of front and side withdrawal frames for Univee 3 bag filters with 25 mm deep headers. Modular in design, bag filter installations of various sizes and configurations can be assembled based on standard filter sizes.

### KEY FEATURES

- Univee 3 & 320, a range of multipocket bag filters for high efficiency applications
- Available in 4 grades—90/95%, 80/90%, 60/80% and 40/60%
- Efficiency is laboratory tested to BS 6540 Pt. 1 (EUROVENT 4/5, ASHRAE 52-76)
- Graded EU8–EU5 within their respective Rated Air Flow Range
- Univee 320 Fire Bags tested for compliance with BS 5588 Pt. 9
- A wide range of different frame sizes, bag lengths and number of pockets
- Comprehensive range of front and side withdrawal frames available
- VOKES is quality assessed to BS 5750 Pt. 1 and AQAP-1 registered

# Univee® 3 & 320 – Multipocket Bag Filters

**EUROVENT Grade – (Average Filter Efficiency)**

**EU8 – (90/95%)**

**EU**

To Fit Frame Size/ Header Size mm	Bag Length mm	Number of Pockets	Rated Air Flow Range m <sup>3</sup> /h Nominal	Rated Initial Resistance Pa Nominal	VOKES Part No.		Rated Initial Resistance Pa Nominal
					Standard	Fire Resistant	
610 x 610  25†	900	9	3000—4000—5000	105—160—220	<b>U385965</b>	<b>U32085965</b>	85—130—180
		8	2500—3400—4300	85—135—190	<b>U385865</b>	<b>U32085865</b>	60—100—140
	600	8	2100—3050—4000	80—120—165	<b>U383865</b>	<b>U32083865</b>	54—84—120
		6	1600—2300—3000	80—120—165	<b>U383665</b>	<b>U32083665</b>	54—84—120
	500	6	1300—1900—2500	78—112—148	<b>U382665</b>	<b>U32082665</b>	45—70—98
	350	6	950—1350—1750	70—100—130	<b>U381665</b>	<b>U32081665</b>	42—65—85
610 x 508  25†	900	7	2500—3400—4300	100—150—210	<b>U385755</b>	<b>U32085755</b>	78—120—170
		6	2050—2900—3750	85—135—190	<b>U385655</b>	<b>U32085655</b>	60—100—140
	600	6	1600—2300—3000	80—120—165	<b>U383655</b>	<b>U32083655</b>	54—84—120
		5	1300—1900—2500	80—120—165	<b>U383555</b>	<b>U32083555</b>	54—84—120
	500	5	1150—1600—2050	78—112—148	<b>U382555</b>	<b>U32082555</b>	45—70—98
	350	5	775—1125—1475	70—100—130	<b>U381555</b>	<b>U32081555</b>	42—65—85
610 x 305  25†	900	4	1250—1700—2150	85—135—190	<b>U385435</b>	<b>U32085435</b>	60—100—140
	600	4	1050—1525—2000	80—120—165	<b>U383435</b>	<b>U32083435</b>	54—84—120
		3	800—1150—1500	80—120—165	<b>U383335</b>	<b>U32083335</b>	54—84—120
	500	3	650—950—1250	78—112—148	<b>U382335</b>	<b>U32082335</b>	45—70—98
	350	3	475—675—875	70—100—130	<b>U381335</b>	<b>U32081335</b>	42—65—85

† 20 mm Headers—The above range of filters is based on 25 mm Headers. For 20 mm Headers, select the required filter eg **U385965** and 1

**OTHER SIZES** – Various alternative sizes are available on request including, half and three-quarters high filters and intermediate bag length

## HOW TO SPECIFY

Filter Efficiency/Grades—Univee 3 & 320 bag filters have been performance tested for efficiency to BS 6540 Pt.1 (EUROVENT 4/5, ASHRAE 52-76) and are available in the following four grades.

Univee 3 Grade	Av. Filter Efficiency	EU Grade*
Grade 8	90 – 95%	EU8
Grade 7	80 – 90%	EU7
Grade 6	60 – 80%	EU6
Grade 5	40 – 60%	EU5

\*Univee 3 & 320 bag filters can be operated at their corresponding EU Grade, within the Rated Air Flow Range

Frame size—Univee 3 & 320 bag filters are specified in terms of the frame size in which the filter fits and equate with the following actual sizes:

Frame Size mm	Header Dims. mm
610 x 610	592 x 592
610 x 508	592 x 490
610 x 305	592 x 287

Univee 3 & 320 bag filters are supplied with 25 mm headers as standard, but are also available with 20 mm headers.

For new installations select a frame size which provides a suitable arrangement of filter modules having regard for the space available and the air flow rate.

**I7 – (80/90%)**

**EU6 – (60/80%)**

**EU5 – (40/60%)**

Grade	VOKES Part No.		Rated Initial Resistance Pa Nominal	VOKES Part No.		Rated Initial Resistance Pa Nominal	VOKES Part No.	
	Standard	Fire Resistant		Standard	Fire Resistant		Standard	Fire Resistant
7	U375965	U32075965	65—100—130	U365965	U32065965	48—72—104	U355965	U32055965
6	U375865	U32075865	43—65—100	U365865	U32065865	33—48—72	U355865	U32055865
5	U373865	U32073865	29—51—80	U363865	U32063865	24—42—66	U353865	U32053865
4	U373665	U32073665	29—51—80	U363665	U32063665	24—42—66	U353665	U32053665
3	U372665	U32072665	23—38—55	U362665	U32062665	15—28—45	U352665	U32052665
2	U371665	U32071665	15—24—33	U361665	U32061665	11—16—23	U351665	U32051665
1	U375755	U32075755	50—80—115	U365755	U32065755	39—58—88	U355755	U32055755
6	U375655	U32075655	43—65—100	U365655	U32065655	33—48—72	U355655	U32055655
5	U373655	U32073655	29—51—80	U363655	U32063655	24—42—66	U353655	U32053655
4	U373555	U32073555	29—51—80	U363555	U32063555	24—42—66	U353555	U32053555
3	U372555	U32072555	23—38—55	U362555	U32062555	15—28—45	U352555	U32052555
2	U371555	U32071555	15—24—33	U361555	U32061555	11—16—23	U351555	U32051555
1	U375435	U32075435	43—65—100	U365435	U32065435	33—48—72	U355435	U32055435
6	U373435	U32073435	29—51—80	U363435	U32063435	24—42—66	U353435	U32053435
5	U373335	U32073335	29—51—80	U363335	U32063335	24—42—66	U353335	U32053335
4	U372335	U32072335	23—38—55	U362335	U32062335	15—28—45	U352335	U32052335
3	U371335	U32071335	15—24—33	U361335	U32061335	11—16—23	U351335	U32051335

Replace the final digit '5' with a '0' eg U385960.

15.

Bag Length & Number of Pockets—For each frame size Univee 3 & 320 bag filters are available in a range of four lengths between 350 and 900 mm. Depending on the frame size there are various pocket options ranging from 3 to 9 pockets.

In general terms for any given air flow it is recommended that the filter with the maximum bag length and largest number of pockets is selected. This solution will provide the optimum performance in terms of efficiency and dust holding capability, and as a consequence the longest filter life and lowest overall running cost.

**EXAMPLES**

VOKES Part No. **U385965**

- U3** Univee 3 multipocket bag filter
- 8** Grade 8 – 90-95% Average Filter Efficiency
- 59** Bag Length – 900 mm, Number of Pockets – 9
- 65** Fits Frame Size: 610 x 610 with 25 mm Header

VOKES Part No. **U32073435**

- U320** Univee 320 multipocket fire resistant bag filter
- 7** Grade 7 – 80-90% Average Filter Efficiency
- 34** Bag Length – 600 mm, Number of Pockets – 4
- 35** Fits Frame Size, 610 x 305 with 25 mm Header

**TEMPERATURE**

Maximum working temperature (continuous): 60°C

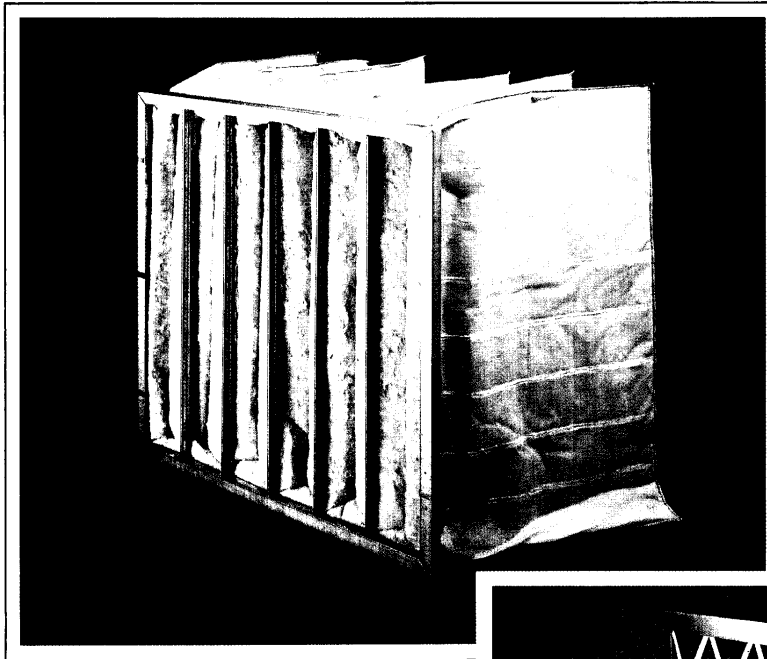
**HUMIDITY**

Maximum relative humidity: 100%

**PRESSURE DROP**

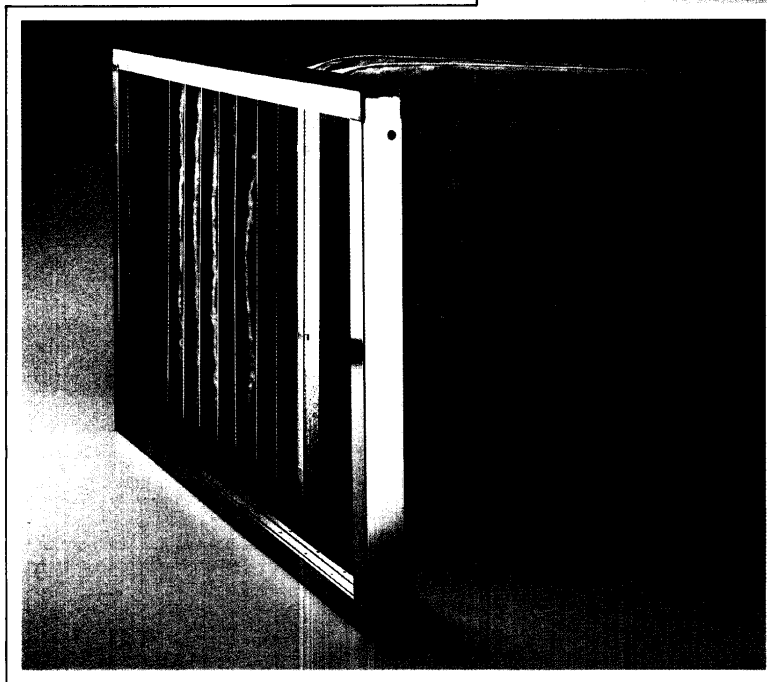
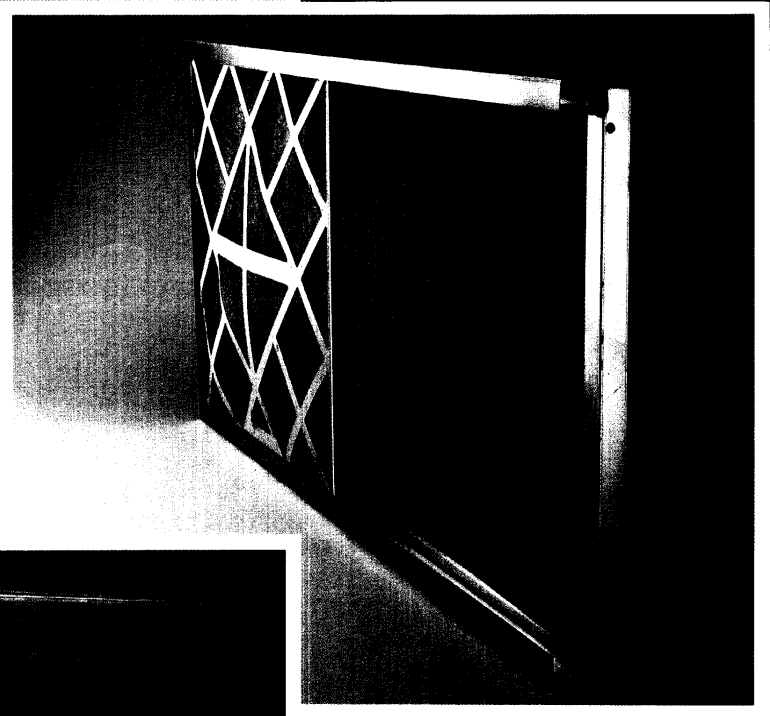
Maximum recommended final: 650Pa

# Univee® 3 & 320 – Multipocket Bag Filters



VOKES Univee 320 Grade EU8 Fire Resistant Multipocket Bag Filter.

VOKES Veeglass VG2 pre-filter fitted in a Side Withdrawal Frame.



VOKES Univee 3 fitted in a Side Withdrawal Frame.

**VOKES**

## VOKES AIR FILTRATION

Henley Park, Guildford, Surrey GU3 2AF, England  
Tel: Guildford (01483) 569971 Fax: (01483) 236419  
e-mail: vokes.air@btrinc.com

The company reserves the right to change specifications without notice.



Certificate No. FM 1956

# VOKES

## Filtration Technology

### TECHNICAL BULLETIN

#### Univee 5 Bag Filters

##### Introduction

The Univee 5 synthetic bag filters combine high dust holding capacity with low pressure drops and reliable, highly cost effective performance. Available in 3 grades - EU3, EU4 and EU5 - they can provide for high efficiency pre-filtration or low grade second stage filtration. The bags are self-supporting and are, therefore, particularly suitable for variable air volume systems without the problems associated with bag filters 'flapping' or collapsing.

##### Construction

A non-woven, synthetic blend of polyester fibres is used to manufacture this high capacity, low pressure drop media. The pockets are stitched and positively locked into a coated mild steel header frame offering high resistance to corrosion. There are 2 options for bag lengths - 350mm or 500mm - giving good flexibility to meet various air flow rates.

##### Range

#### Univee 5 - Synthetic Bag Filters

EUROVENT Grade - (Average Arrestance/Efficiency)

EU5 - (51% E)

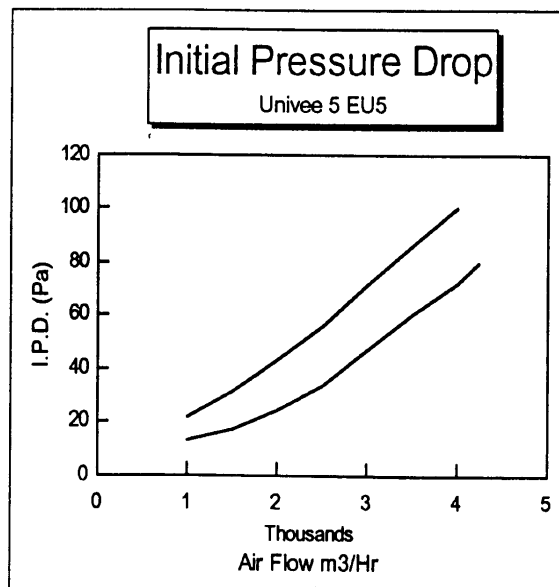
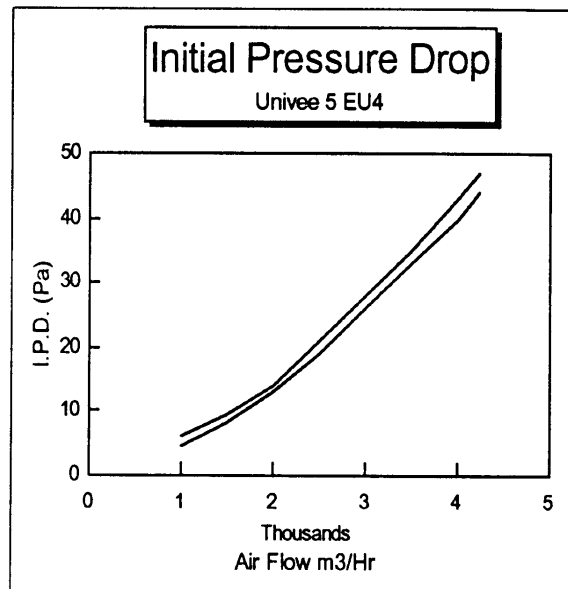
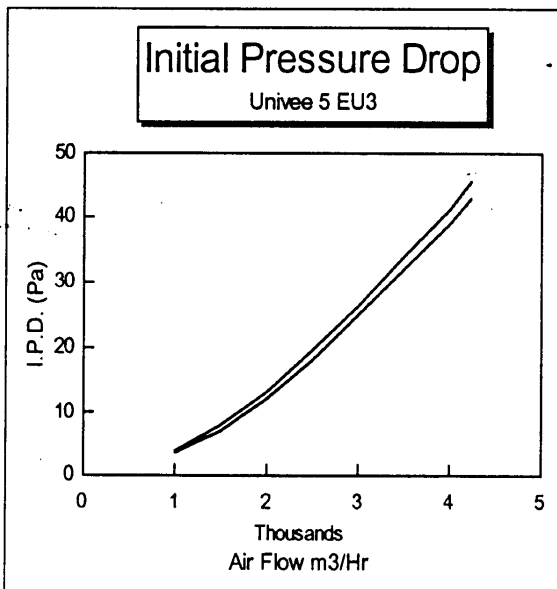
EU4 - (92% A)

Header Size (Actual) mm	Bag Length mm	Number of Pockets	Maximum Air Flow m <sup>3</sup> /h Nominal	Rated Initial Resistance Pa Nominal	Farnell Order Code	Vokes Part Number	Rated Initial Resistance Pa Nominal	Farnell Order Code	Vokes Part Number
592x592x22	500	4	3400	55	7008648	U552462	30	7008650	U542462
	350	4	2350	55	7008624	U551462	30	7008636	U541462
592x490x22	500	3	2550	55	7008685	U552352	30	7008697	U542352
	350	3	1750	55	7008661	U551352	30	7008673	U541352
592x287x22	500	2	1700	55	7008727	U552232	30	7008739	U542232
	350	2	1150	55	7008703	U551232	30	7008715	U541232

## Performance Data

The following performance was recorded during testing in strict accordance with BS6540 Pt1 (Eurovent 4/5, ASHRAE 52-76), using a full size (592x592x500mm, 4 pocket) Univee 5 bag filter.

Filter	Air Flow Rate (m3/Hr)	Average Arrestance (%)	Average Dust Spot Efficiency (%)	Dust Holding Capacity (g)	EUROVENT Rating
U532462	3400	89	-	1678	EU3
U542462	3400	92	-	1474	EU4
U552462	3400	-	51	900	EU5



# Jnivee 3 - Multipocket Bag Filters

EUROVENT Grade - (Average Filter Efficiency)      EU8 - (90/95%)      EU7 - (80/90%)      EU6 - (60/80%)

Header Size (Actual) mm	Bag Length mm	Number of Pockets	Rated Air Flow Range m <sup>3</sup> /h Nominal	Rated Initial Resistance Pa Nominal	Farnell Order Code	Vokes Part Number	Rated Initial Resistance Pa Nominal	Farnell Order Code	Vokes Part Number
592x592x25	600	6	1600-2300-3000	80-120-165	7008533	U383665	54-84-120	7008545	U373665
592x490x25	600	5	1300-1900-2500	80-120-165	7008569	U383555	54-84-120	7008570	U373555
592x287x25	600	3	800-1150-1500	80-120-165	7008594	U383335	54-84-120	7008600	U373335