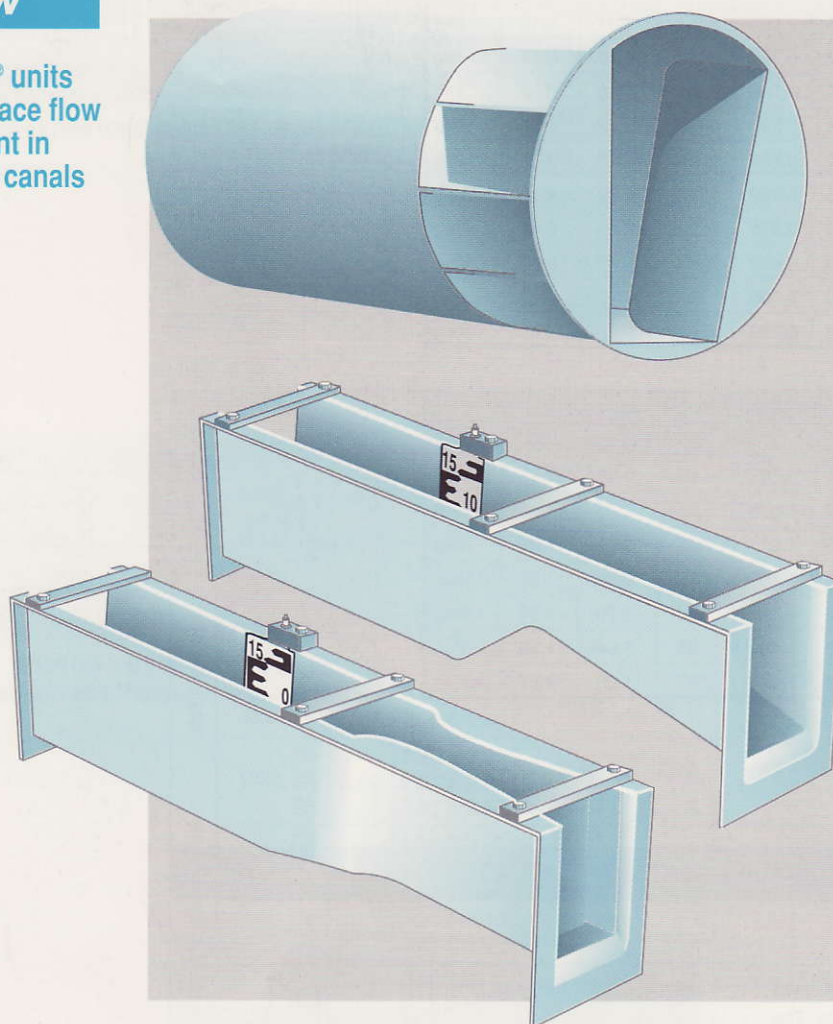


# GAUGING WEIRS VENTURI FLUMES CONTRAFLUX®

## FLOW

Efflumètres® units  
for free-surface flow  
measurement in  
outfalls and canals



- Devised by NEYRPIC-NEYRTEC.
- Full-scale calibration in our laboratory.
- Little space required.
- Easy to install.
- Rugged design, needs no adjustment.
- Available in reinforced polyester or stainless steel.
- Wide discharge range: from 0.5 l/s up to 13 m³/s.
- Venturi flumes with a light weir for low flow measurement.
- Hydrologic offers advice on installation.

## Principle of operation

Hydrologic Efflumètres® are "contraction devices" designed for use on the bottom or sides of a channel which convert streaming flow at the control section into shooting flow with the result that the water level upstream of the restriction section is a known increased function of the discharge.

Discharge can be determined by either of the following methods:

- by a direct level-scale reading and application of a head/discharge calibration curve.
- by use of separate instrumentation, usually operating with a bubbler system.

Accuracy of our instruments is:

- 3% for discharges from 5 to 15 %.
- 1.5% for discharges from 15 to 100 %.

## Equipment

### ● Venturi flumes

- discharge range: 0.5 l/s to 7.4 m³/s (26 500 m³/h).
- adapted to heavily sediment-laden waters.

### ● Gauging weirs

- discharge range: 2 l/s to 12 m³/s (43 000 m³/h).
- adapted to lightly sediment-laden waters.
- adapted to canals of greater width.
- adapted to small level drops ( $\Delta H$ ).

### ● Contraflux®

- discharge range: 5 l/s to 1.75 m³/s (6 300 m³/h).
- adapted for measuring free-surface outflows and particularly polluted effluents in cylindrical (or ovoid) pipes.

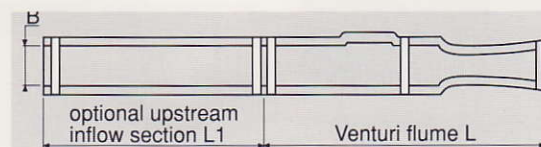


# VENTURI FLUMES

## Dimensional characteristics

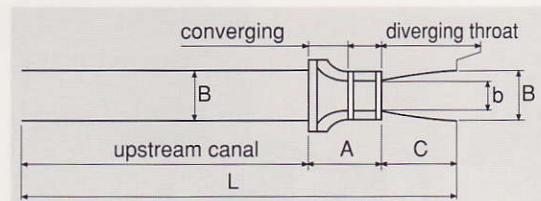
Reference	Discharge		Inside dimensions (meters)				Overall dimensions		
	Q min	Q max	L	B	H	L1	Width	Depth	Weight
1253AV	0.02 l/s	0.52 l/s	0.335	0.040	0.095	0.200	0.09	0.12	1kg
1253AW	0.05 l/s	1.07 l/s	0.450	0.055	0.105	0.275	0.11	0.13	2kg
1253AX	0.18 l/s	3.32 l/s	0.720	0.085	0.158	0.425	0.16	0.19	4kg
1253AY	0.26 l/s	4.97 l/s	0.795	0.100	0.180	0.500	0.18	0.22	6kg
1253AZ	0.47 l/s	9.28 l/s	0.925	0.125	0.220	0.625	0.22	0.26	9kg
1253A	0.70 l/s	14 l/s	1.060	0.150	0.225	0.750	0.23	0.33	13kg
1253B	1.50 l/s	29 l/s	1.420	0.200	0.300	1.000	0.28	0.40	20kg
1253C	2.70 l/s	50 l/s	1.780	0.250	0.375	1.250	0.34	0.48	40kg
1253D	4.50 l/s	82 l/s	2.130	0.300	0.450	1.500	0.39	0.58	60kg
1253E	9.00 l/s	168 l/s	2.840	0.400	0.600	1.360	0.50	0.73	100kg
1253F	16.00 l/s	300 l/s	3.550	0.500	0.750	1.700	0.60	0.88	140kg

Series 1253



This includes the Venturi flume with an optional upstream inflow section.

Series 1254



This includes the converging unit and throat. The upstream canal is supplied by the customer.

We supply specific instruments on request.

## Venturi flume installation requirements

### Temporary installation

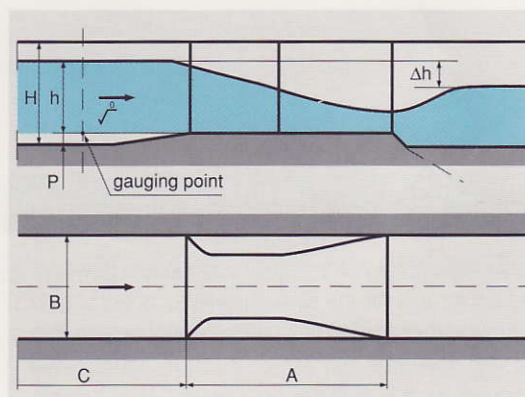
In an earth canal, the device can simply be set level and provided with rough sealing arrangements. The incorporated upstream canal section ensures accurate measurement without further flow fittings upstream. In an existing masonry canal, the device can be installed with rigid plastic foam, this being easily removable later on.

### Permanent installation

The device should be installed on the canal bottom, with suitable supports in the masonry work and levelled lengthwise and across by means of the adjusters provided.

### Upstream canal

- Slope: up to 0.5%.
- Length:  $C \geq 5 B$  (or 10 B in case of a bend for example).
- Ease of installation, saving on total cost and a better outflow thanks to the optional upstream inflow section.



### Level drop

Required between upstream and downstream level ( $\Delta h$ ):  $\geq 0.25h$ .

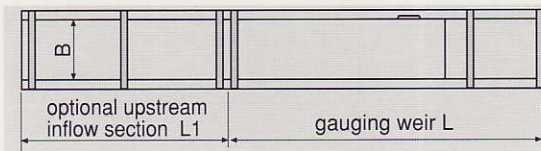


# GAUGING WEIRS

## Dimensional characteristics

Complete canal

Reference	Discharge		Inside dimensions (meters)				Overall dimensions		
	Q min	Q max	L	B	H	L1	Width	Depth	Weight
1245A	0.8 l/s	17.5 l/s	1.22	0.20	0.22	1.00	0.29	0.29	14 kg
1245B	1.6 l/s	33.5 l/s	1.52	0.29	0.27	1.45	0.39	0.35	26 kg
1245C	3.2 l/s	74 l/s	1.93	0.42	0.35	2.10	0.53	0.45	36 kg
1245D	6.8 l/s	152 l/s	2.43	0.60	0.44	2.43	0.72	0.55	75 kg



Weir only

Type	Reference	Crest height  P m	Canal		Discharge per meter width (1)		Weir length  A m	H max. water  m	Overall dimensions	Weight	
			Width limits B m	Min. depth for max. discharge  m	Q l/s  min.    max.				Long. x Larg. x H A x (B+5) x P+3  m	max.  kg	
	Metal gauging weirs	1241 B 1241 C	0.12	0.70 à 1.09 1.10 à 1.45	0.34	7	167.5	0.655	0.168	0.655 x (B+0.05) x 0.15	20 25
1241 E 1241 F		0.24	0.70 à 1.09 1.10 à 1.45	0.68	20	478.5	1.31	0.336	1.31 x (B+0.05) x 0.27	50 70	
1241 G 1241 H		0.48	0.70 à 1.09 1.10 à 1.45	1.35	58.5	1378	2.62	0.672	2.62 x (B+0.05) x 0.51	110 150	
Masonry gauging weirs		B3 1242 B4 B5	0.24	1.50 à 2.00 2.01 à 2.80 2.81 à 3.60	0.68	20.5	483	1.31	0.336	1.8 x B x 0.24 1.31 x 0.24	10 15 20
		C3 C4 1242 C5 C6 C7	0.48	1.50 à 2.00 2.01 à 2.80 2.81 à 3.60 3.61 à 4.40 4.41 à 5.20	1.35	59.2	1390	2.62	0.672	2.6 x B X 0.48	80 100 130 150 180
		1242 D3 D4 D5 D6 D7 D8	0.60	1.50 à 2.00 2.01 à 2.80 2.81 à 3.60 3.61 à 4.40 4.41 à 5.20 5.21 à 6.00	1.68	84.5	1977	3.28 (3) ou plus	0.84	3.28 x B X 0.6 (3)	150 200 250 300 350 400

## Gauging weir installation requirements

### Temporary installation (1245)

In an earth canal, the device can simply be set level and provided with rough sealing arrangements. The incorporated upstream canal section ensures accurate measurement without further flow fittings upstream.

In an existing masonry canal, the device can be installed with rigid plastic foam, this being easily removable later on.

### Permanent installation

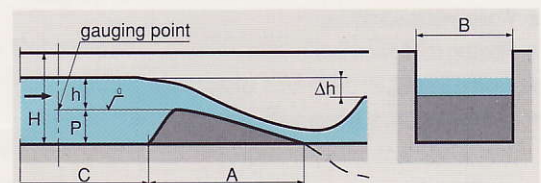
The device should be installed on the canal bottom, with suitable supports in the masonry work and levelled lengthwise and across by means of the adjusters provided.

### Upstream canal

- Slope: up to 0.5%.
- Length:  $C \geq 5 L$   
(or  $10 L$  in case of a bend for example).

### Level drop

Required between upstream and downstream level ( $\Delta h$ ):  $\geq 0.4h$ .





## Dimensional characteristics

The Contraflux can be fitted direct to cylindrical or ovoid pipes without intermediate ducting, thus minimising capital costs.

There are three models:

- Series 1236 with a gauge well.
- Series 1237 without any gauge well which can be used with the DPN 7 flowmeters. The instruments are adapted to be used with heavily loaded waters.
- Series 1238 without any gauge well but with a manhole access for ease of maintenance.
- Accuracy: under normal working conditions as specified, the calibration curve supplied with our Contraflux is guaranteed to be within  $\pm 4\%$ .

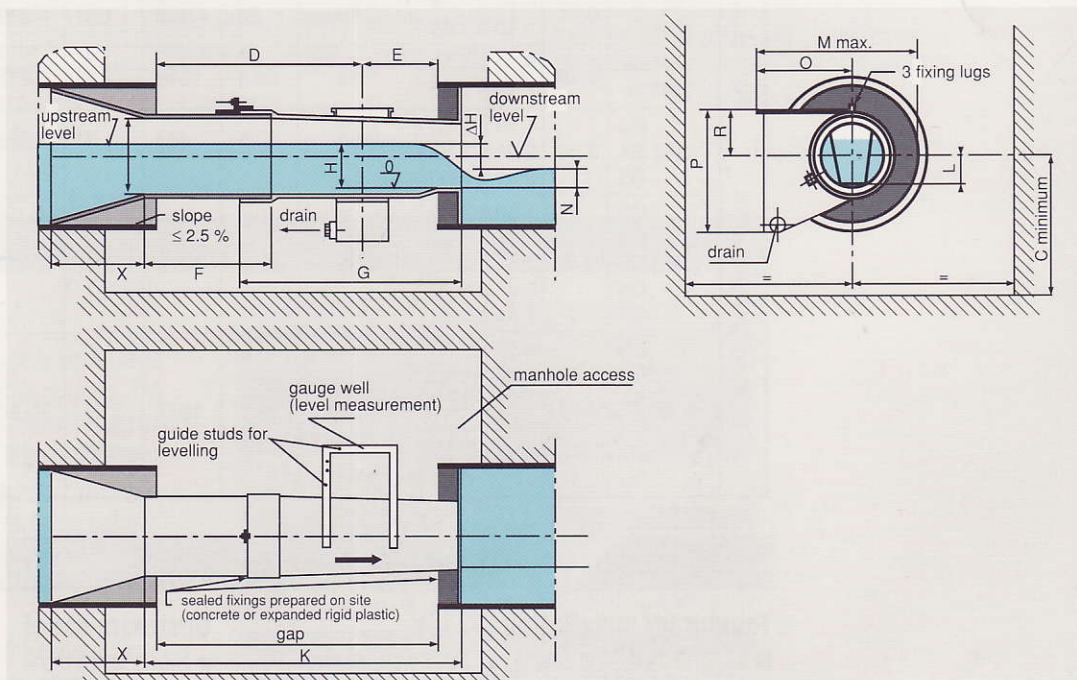
Ref. 1236	Diameters mm			H meas. max. mm	Discharge rates l/s		Pipe cut-out C mm
	Nominal mm	min.	max.		min.	max.	
A	200	150	245	108	0.2	4.9	510 $\pm$ 5
B	300	250	345	183	0.7	18.7	750 $\pm$ 10
C	400	350	445	258	2	46.7	1000 $\pm$ 20
D	500	450	595	332	3	85	1300 $\pm$ 30
E	700	600	795	452	7	178	1350 $\pm$ 40
F	900	800	990	616	18.5	418	1350 $\pm$ 50
G	1100	1000	1200	780	36	738	1350 $\pm$ 50
H	1250	1200	1495	930	50	1010	1700 $\pm$ 75
I	1750	1500	2000	1170	84	1750	2650 $\pm$ 75

\* Outside diameter without convergent part.  
For minimum pipe bore a non-convergent Contraflux is required.  
For maximum pipe bore a Contraflux with maximum convergent is required.  
Please quote pipe bore when ordering to enable us to determine the appropriate convergent.

## Contraflux installation requirements

The Contraflux is located in the pipe using concrete or expanded rigid plastic. If the pipe is ovoid-shaped or if its diameter is greater than the maximum specified for each Contraflux model or if the slope exceeds 2.5 %, the convergent part is replaced by an approach tube suited to the Contraflux model used.

- The Contraflux can be placed at the end of the pipe (i.e. no downstream pipe), for which purpose a Contraflux attachment will be needed at the downstream end.
- Length X of the convergent part is based on the pipe bore, the precise measurement of which must be specified when ordering.



## Other products

- Flowmeters DPN 7/1 and DPN 7/2.
- Waste water samplers.
- Floating roll flowmeters.
- Venturi flumes.
- Current meters.
- Levelmeters LPN 8/1 and LPN 8/2.
- Floating meters CAE 7.
- Mechanical and electronic encoders.
- Code converters.
- Level scales.

Technical data and specifications binding only after confirmation.