

# INTRA-AUTOMATION GmbH

D-41515 Grevenbroich \* Otto-Hahn-Str. 20 \* Tel: +49 2181-68761 \* Fax: +49 2181-64492

## WINFLOW 2.75 (I) Diff. Pressure Calculation ITABAR - Flow - Sensor

Company: Airlitec  
Name(capital letters):  
Street:  
Zip Code/City:  
Offer-/Com. No: 11/29567  
P. Order Number:  
Tag No.:  
Serial No.:  
Pipe Data: ID=1800,00/43,000 mm - horizontal  
Date: 10.08.2011  
Person in charge E.E.

Calculation: Mass rate of Flow Liquids  
Fluid: Water

Base Temperature	273,15	Kelvin
Base Pressure	101,30	kPa

Pipe Internal Dimensions to 20°C 1.800,00 mm

Flowing Temperature: 23,800 °C  
Flowing Pressure: 2,960 bar A  
Density: 997,302 kg/m<sup>3</sup>  
Viscosity: 0,9150 cPs  
K-Factor: 0,6794 without unit

	QMax	QNorm	QMin	
Flow Rate	45.000.000,00	36.000.000,00	9.000.000,00	kg/H
Reynolds No.	9.661.202	7.728.962	1.932.240	without unit
Permanent press. loss	96,030	61,500	3,880	mm H2O
Velocity:	4,93	3,94	0,99	m/sec.
<b>Differential Pressure</b>	<b>2.596,516</b>	<b>1.661,770</b>	<b>103,861</b>	<b>mm H2O</b>

Itabar-Type: IBF-66-ID1800/43mm-L-SA-2-C60-0-0-0-0-KI-HL-T0-A03  
Material Sensor Monel 400  
Note:

Max. DeltaP 2.909,40 mm H2O      Max. Flow Rate 47.634.204,00 kg/H  
Natural Freq.: 13,73 hz                      Operat. Freq.: 0,66 hz

Your specialist for measuring level and flow

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Company: Airlitec  
Name(capital letters):  
Street:  
Zip Code/City:  
Offer-/Com. No: 11/29567  
P. Order Number:  
Tag No.:  
Serial No.:  
Pipe Data: ID=1250,00/43,000 mm - horizontal  
Date: 10.08.2011  
Person in charge E.E.

Calculation: Mass rate of Flow Liquids  
Fluid: Water

Base Temperature	273,15 Kelvin
Base Pressure	101,30 kPa

Pipe Internal Dimensions to 20°C 1.250,00 mm

Flowing Temperature: 23,800 °C  
Flowing Pressure: 2,960 bar A  
Density: 997,302 kg/m<sup>3</sup>  
Viscosity: 0,9150 cPs  
K-Factor: 0,6556 without unit

	QMax	QNorm	QMin	
Flow Rate	25.000.000,00	20.000.000,00	5.000.000,00	kg/H
Reynolds No.	7.728.962	6.183.169	1.545.792	without unit
Permanent press. loss	214,630	137,400	8,580	mm H2O
Velocity:	5,67	4,54	1,13	m/sec.
<b>Differential Pressure</b>	<b>3.700,575</b>	<b>2.368,368</b>	<b>148,023</b>	<b>mm H2O</b>

Itabar-Type: IBF-66-ID1250/43mm-L-SA-2-C60-0-0-0-0-KI-HL-T0-A03  
Material Sensor Monel 400  
Note:

Max. DeltaP	7.769,99 mm H2O	Max. Flow Rate	36.225.592,00 kg/H
Natural Freq.:	36,33 hz	Operat. Freq.:	0,90 hz

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