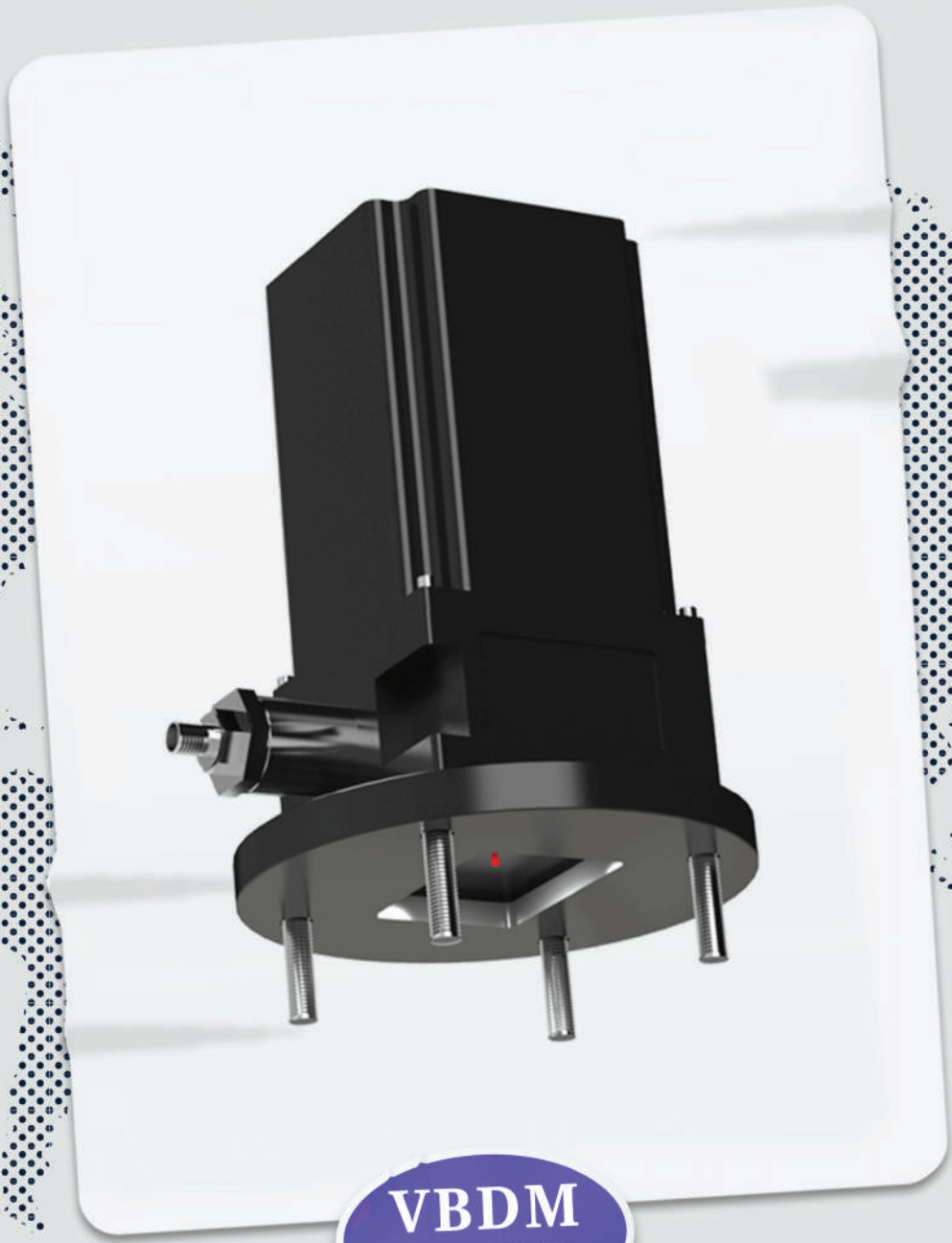
Call Now
+91-7382708685

VASTHI
INSTRUMENTS

Back Scattered Dust Monitor



VBDM
-1500

www.vasthi.com

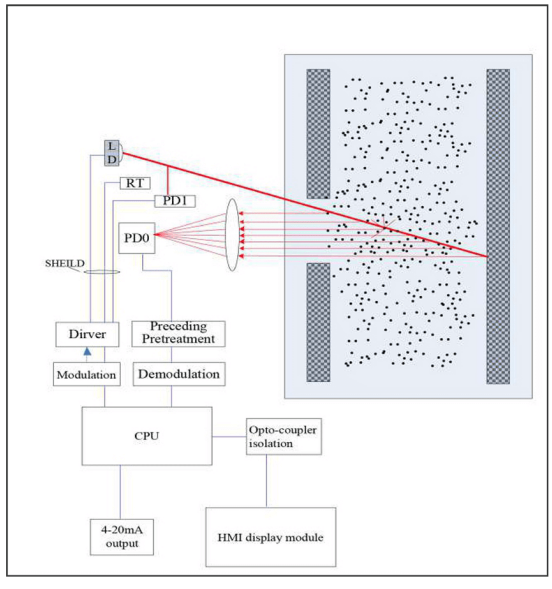
/ vasthiinstruments

Plot No. 21 & 22, Block No. 24,
Phase – 4, AutoNagar,
Guntur 522 001, AP

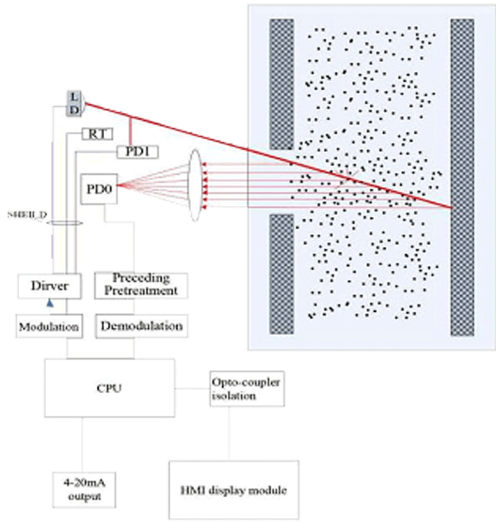
Ideal For monitoring opacity and smoke levels in the exhaust gas of industrial combustion or air filtration precesses.

Rugged 316 stainless steel construction
Choice of interface options enabling easy integration
Modulated green LED source for long lifetime stability and immunity to ambient light
Measurement reading as % Opacity
Optional Operator Interface with different mounting configuration
In site measurement directly in exhaust gas flow using the widely accepted light transmission technique
Free utility software for PC based setup, control, and data logging

Figure 2.1 System Principle



The optical parts include laser source, power control, photoelectric sensor and scattered light receiving. The 650nm laser beam sent by the laser at a tiny angle into the emission source, where it acts with the dust particles to produce scattered light. The back scattered light will be processed in the sensor into electrical signals. The circuit part will realize the photoelectric conversion, laser beam modulation, signal ampli□cation, demodulation, light source power control, V/I conversion and HMI display. Calibrator is used to generate stable optical signals to zeroing and span calibration of the device.



Technical Features

The device design has been implementing the thinking of "no tool" onside installation, to minimize the complexity of □eld installation.
Generally, the standard setup parameters are applicable to the □ue wall with a thickness less than 400mm and a diameter greater than the device stack label size. The measuring area can be customized as required speci□cation. Users may also adjust the area under the approval and guidance of the maintenance personnel.
Laser backward scattering principle can prevent the laser beam from swinging When the refractive index is uneven during the mechanical vibration at uneven temperature Single-side installation without optical path alignment. The on-site dispel can read the dust concentration in the (4-20)mA standard industrial current output makes the connection easy.
Device overall power consumption is very low at around 3w.
Technical Features

Note :

Has adopted a 128 x 64 graphic LCD for display.
The LCD contrast display adjustment can be made through adjusting a potentiometer on the front panel

The VBDM-1500 has no moving parts, is of rugged design and has an excellent reliability record.
Regular maintennance simply involves cleaning the TX and RX lenses, which are easily accessible due to our latched head design.
Both the TX and RX heads are supplied with an air purge body, which when connected to a high
volume source of clean air, keep the contaminated stack gas away for the lens surfaces.
An Aluminium air purge body is available for use on standard installations and a more advanced Stainless steel air purge body is available for more demanding installation.

Measurement Performances

S.No	Parameter	Units	Min	max	Comment
1	Path Length	m	0.5	20	Flange
2	Measuring Range	°C	0.010	0.0	User selectable
3	Accuracy	°C	-2	+2	
4	Resolution	%		0.1	Display resolution
5	Damping	s	1	60	Selectable
6	Drift with Temp	%	-2	+2	Over any 20°C
7	Wavelength	nm	510	540	Green LED
8	Voltage	V		24	Optional 90-260Vac PSU
9	Voltage Tolerance	%	-10	+10	
10	Current Consump	mA		400	
11	Power Up Consu	mA		400	
12	Air Supply Vol	L/mín	-50	200	To each air-purge body.
13	Air Supply Fitting				1" BSP threaded aperture in each air-purge body
17	Serial Combs				ModBus RTU via RS485
18	Analogue Output	mA	4	20	Internal USB (OI),
19	Digital Relay (two)	A	0	3	@30Vdc
20	Operating Humidity	%		100	Air humidity around the heads.

1) The installation position of the optical head, for which vibration, surrounding temperature, Flow stability, the distance between the elbows or variable diameter at the downstream and upstream of the Low, as well as the safety of the installation and maintenance channels shall all be considered.

2) Arrangement of the signal lines (distance, paths & interference with the other magnetic equipment).

3) Power supply, cables, pipeline and overload protection.

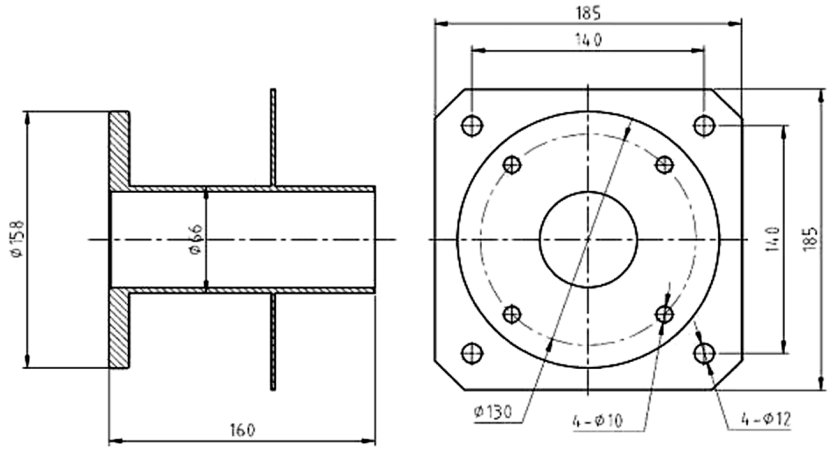


Figure 3.1 Directions of the flange welding

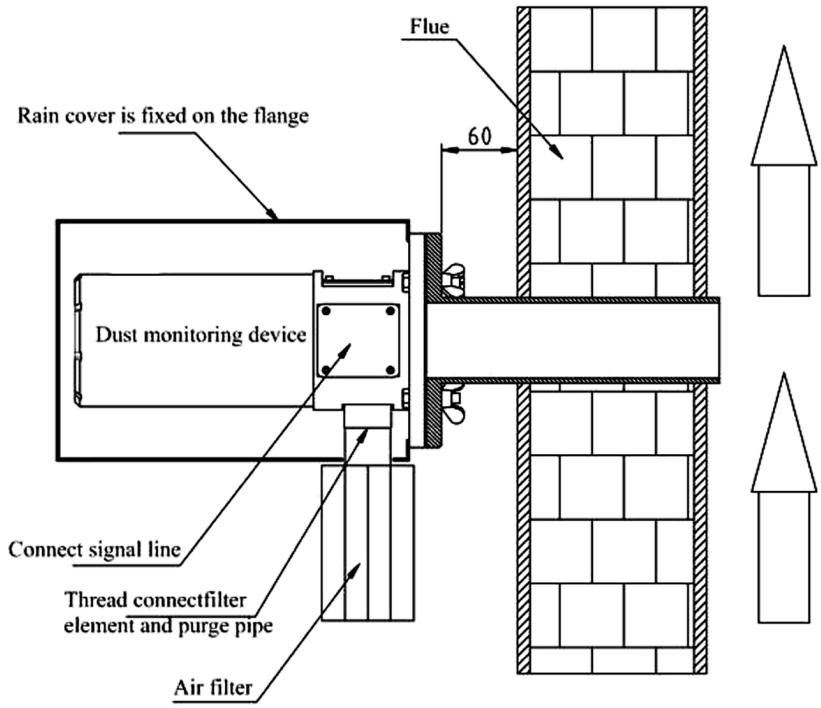


Figure 3.2 Negative pressure

VASTHI INSTRUMENTS
Plot no: 21 & 22 , Block no: 24, Phase - IV ,
Auto Nagar, Guntur - 522 001, AP, India.
Tel : +918632238667,+917382708685,+919581678685
web: www.vasthi.com,
Email : info@vasthi.com, sales@vasthi.com