Specifications for Optical Density Measurement system

Supply, Installation and Commissioning of opacity and optical density of smoke measurement system with continuous data logging in PC with respect to time in fire experiments.

Technical Specifications

Sl No	Parameter	Range	Accuracy	Resolution
1.	Opacity	0-100 %		
2.	Optical Density	0/10-1000 mg/m^3 or more	±2% or better	0.1 or better
3.	Light Transmission	Double Pass		
4.	Operating Wave length	510-540 nm (green LED)		
5.	Damping	1-60 s (Selectable)		
6.	Drift with temperature	± 2		
7.	Working path length	0.5-10 m or more		
8.	Max Gas temperature	600 ^{o}C		
9.	Inter face option	RS485/Modbus RTU.		
10.	Relay contact	3A level alarm.		
11.	Compressor air supply volume	5-60 m^3/hr or 50 to 200 L/min		
12.	PC Specifications.	Processor: Intel Xeon 6 Core CPU or more RAM: 32GB DDR4 or more Graphics Card: NVIDIA Quadro 4GB or more Hard Drive: 2TB SATA/SSID or more Optical Drive: DVDRW SATA Bays: 3 Bays or more Ports: 3 USB or more Software: pre loaded windows 10 or better Monitor: 19 inch or more Power Supply: Minimum 400 W or more		

Terms and Conditions:
1. Complete Installation, demonstration, commissioning, system integration, technical training of complete system should be done by the supplier at experimental facility at site CBRI, Roorkee.
2. Installation related cables, conduits, accessories, software, civil and electrical works should be supplied and carried out by bidder as per actual site installation requirement of **attached figure**.
3. The following document in hard and soft copies should be provided
   - (i) Instruction manual for operation of equipment.
   - (ii) Proper calibration certificate.
   - (iii) Instruction manual for software
4. Warranty for system should be one year in all respect

Test Burn Room

0.4m dia
Exhaust
pipe

2.4 m

10 m

Existing Data Logger room

Smoke obscursion
detector 2

Smoke obscursion
light souce 2

914

360
380

1050

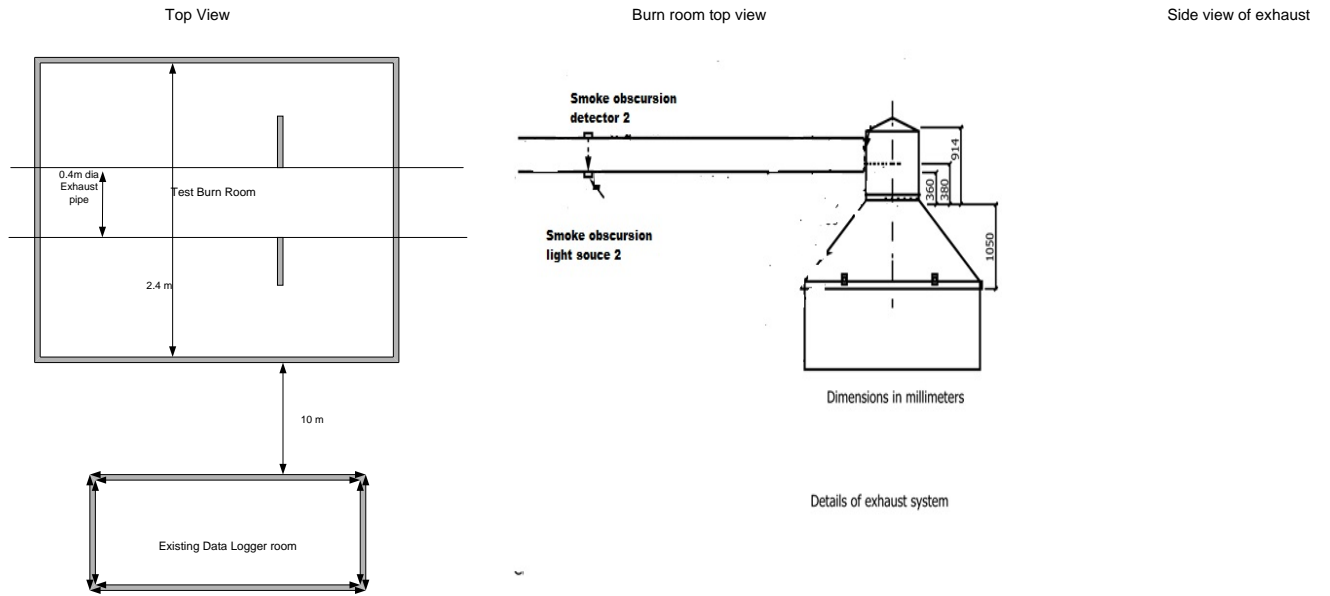Dimensions in millimeters

Details of exhaust system

Figure: Smoke opacity measurement location (a) Top view (b) Side View of exhaust duct.