

ITEM NO.10**Indian Oil Corporation Limited****Gujarat Refinery****Technical Specification for Multi Gas Detectors****Specification of Portable Multi-Gas Detector with Four Sensors**

S.NO	PARTICULARS	SPECIFICATIONS.	CONFIRMATION BY BIDDER
1	Use	Generation of audio-visual alarm at pre-set value along with simultaneous digital display for LEL,O ₂ ,H ₂ S & CO level	
2	Type	The metering unit shall be microprocessor based .It shall be suitable for use in open as well as confined space for one hand operation and rugged with casing of protective rubberized over-mold.	
3	Sensor	Combustible and toxic gas sensors shall be catalytic and electro-chemical type respectively. Sensors shall be replaceable type	
4	Ambient Condition	0 ⁰ c to 50 ⁰ C & Humidity : 10% - 90% RH(non-condensing)	
5	Housing	IP-65 or Better	
6	Area of Use	The monitor shall be intrinsically safe for use in hazardous area classification conforming to class I ,Division I, Group A,B,C,& D(Zone-0,Group-IIA,IIB &IIC) Having certified for use by accredited international agencies like FM/UL/CENELEC/BASSEFA/ATEX and approved by PESO	
7	Range	Combustible Gases : 0 – 100 % LEL O ₂ : 0 to 25 % by vol.(Min) CO : 0-500 ppm(Min) H ₂ S : 0-100 ppm(Min)	
8	Sampling Pump	Each instrument shall be fitted with motorized pump with audio and visual low flow alarm. Option should be to change over from motorized pump mode to diffusion mode.	
9	Remote Sampling Accessories.	Minimum 10 feet long sampling hose and sampling probe equipped with quick connect device shall be supplied along with instrument with suitable filter.	
10	Alarm	Minimum 85 Decibel audible alarm at 30 cm & bright red LED flashing visible alarm with vibration. Two levels of alarms for each gas sensed ,TWA,STEL and low battery as minimum. Set points shall be adjustable over entire range.	

S.NO	PARTICULARS	SPECIFICATIONS.	CONFIRMATION BY BIDDER
11	Battery	Rechargeable battery (NiMH / Li-ion) shall be suitable for minimum 8 hrs. duration (with pump). Charger operable with 230 V, 50 Hz, AC supply shall be supplied with each instrument.	
12	Size and Weight	Easy attachment for putting it on belt. Weight shall not exceed 900gms. (including Battery & Sampling Pump)	
13	Calibration	Frequency shall be at least 6 months. Calibration should be done either through in-built system or through other separate device, which should be under the scope of supplier & party supply the same (one each per detector) along with the detector. If the calibration is done through computer software, party shall submit the same & arrange for activation/license of the software without any additional cost as long as the Detector is in operation at our site.	
14	Accessories	The Instruments shall be supplied with necessary calibration cup/adaptor and calibration tubing facilitate calibration locally.	
15	Display	Self-illuminating back light digital display. Simultaneous display for all four gases.	
16	Fast Response	Maximum 50 sec. to reach to 90% of measured value. The above response time shall be within 10 feet long sampling hose.	
17	Carrying Case	OEM supplied carrying case with shoulder straps should be provided with each instrument for carrying & protection.	
18	RF Protection	Shall be compliant with EMC directive against EMI/RF interferences.	
19	Accuracy	+/- 2% of measured value.	
20	Maximum Resolution	Combustible Gases : 1.0 % LEL O ₂ : 0.1% by vol. CO : 2.0 ppm H ₂ S: 1.0 ppm	
21	Warranty	Minimum 2 years including sensors	
22	Others	All other details shall be as per ANSI/ISA 12.03.01 (Combustible gases) and ANSI/ISA 92.0.01 to 92.06.01 (toxic gases) Or equivalent IEC standards.	

Note:

SN.	Note	Confirmation by Bidder
	Vendor shall submit relevant technical literature of the offered instrument with make and model,copy of the relevant approval along with offer.	
	During supply vendor shall submit operation & Maintenance manual, warranty certificate/approval etc. alongwith each instrument.	
	Vendor shall supply calibration certificate by OEM for all the sensors. The calibration certificate should contain indentification numbers of the sensors & instruments supplied by OEM.	
	Vendor shall clearly indicate the pointwise acceptance/deviation against the above specification in the offer.	
	Vendor shall arrange to rectify the defect with in two weeks from reporting the defect at site/owner premises specified by owner with out any extra cost to the owner during warranty period.	

Note:

1. This sheet to be point wise completely filled, signed & stamped by the vendor and submitted with the bid.
2. Noncompliance or incompletely filled sheet shall not be considered.
3. Deviations, if any shall be clearly mentioned in remark column.

Bidder's
Sign with Seal

ITEM NO.20

Indian Oil Corporation Limited
Gujarat Refinery

Technical Specification for Multi a Gas Detector with Five Sensors

Specification of Portable Multi-Gas Detector with Five Sensors

S.N	PARTICULARS	SPECIFICATIONS.	Vendor's Comments																								
1.	Use	Generation of audio-visual alarm at pre-set value along with simultaneous digital display for Benzene (VOC), LEL,O ₂ , H ₂ S & CO level. The Detector shall have facility to detect benzene in particular. Party to submit relevant document from OEM certifying the same.																									
2.	Sensor	<table border="1"> <thead> <tr> <th>Gas</th> <th>Type of Sensor</th> <th>Range</th> <th>Resolution</th> </tr> </thead> <tbody> <tr> <td>Benzene (VOC)</td> <td>PID Sensor</td> <td>0 to 1000 ppm</td> <td>1 ppm</td> </tr> <tr> <td>LEL</td> <td>catalytic Sensor</td> <td>0 – 100 % LEL</td> <td>1 %</td> </tr> <tr> <td>CO</td> <td>Electro-chemical Sensors.</td> <td>CO : 0-500 ppm(Min)</td> <td>2 ppm</td> </tr> <tr> <td>H₂S</td> <td>Electro-chemical Sensors.</td> <td>H₂S : 0-100 ppm(Min)</td> <td>1 ppm</td> </tr> <tr> <td>Oxygen</td> <td>Electro-chemical Sensors.</td> <td>0 to 25 % by vol. (Min)</td> <td>0.1 %</td> </tr> </tbody> </table>	Gas	Type of Sensor	Range	Resolution	Benzene (VOC)	PID Sensor	0 to 1000 ppm	1 ppm	LEL	catalytic Sensor	0 – 100 % LEL	1 %	CO	Electro-chemical Sensors.	CO : 0-500 ppm(Min)	2 ppm	H ₂ S	Electro-chemical Sensors.	H ₂ S : 0-100 ppm(Min)	1 ppm	Oxygen	Electro-chemical Sensors.	0 to 25 % by vol. (Min)	0.1 %	
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10.	Display	Self-illuminating back light digital display. Simultaneous display for all four gases.	
11.	Carrying Case	OEM supplied carrying case with shoulder straps should be provided with each instrument for carrying & protection.	
12.	Warranty	Minimum 2 years including sensors	
13.	Vendor shall submit relevant technical literature of the offered instrument with make and model, copy of the relevant approval along with the offer.		
14.	During supply vendor shall submit operation & Maintenance manual. Warranty certificate/approval etc. along with each instrument.		
15.	Vendor shall supply calibration certificate by OEM for the detector during supply.		
16.	Vendor shall clearly indicate the point wise acceptance/deviation against the above specification in the offer.		
17.	Vendor shall arrange to rectify the defect with in two weeks from reporting the defect at site/owner premises specified by owner with out any extra cost to the owner during warranty period.		

Additional Details Required

Name of Model of Gas Detector Quoted :	
Name of Manufacturer of the Gas Detector :	

Note:

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Vendor's Sign & Seal