

UNIDO – ECREEE RECP/IEE Nigeria Project

Technical Training and Industrial RECP Assessments

Advisory Note

Portable Measuring Equipment for Industrial RECP Assessments

Resource Efficiency / Water / Waste Management

April 2023

ECREEE – ECREEE RECP/IEE Project: Industrial RECP Assessments Nigeria
Portable measuring equipment for Industrial RECP Assessments: Resource Efficiency / Water / Waste Management

ID RECP-	Sphere of application of the measuring tool/equipment	equipment description	technical parameters / Requirements	suggested supplier	Qty	Unit Price US\$	Total Cost US\$
1	Multifunction measuring instrument	TESTO 440 dp air velocity & IAQ	<ul style="list-style-type: none"> • grafic display • Internal memory • Compatible with probes to measure air velocity (m/s), air volume (m³/hr), sound (dB) • Temp. range -40 - 150 °C • RH (%), Light level (lux) • Offer with probes for: • Lux meter, robust humidty/temperatur probe • Hot wire probe • 10 mm vane head with temp. and humidly and adjustable probe length 	Testo	2		
2	Portable scale/luggage scale	Battery-Free Luggage Scale	<ul style="list-style-type: none"> • Range 50 g to 50 kg • With tara function • No battery 	FLOWZOOM	4		
3	Contactless flowmeter Clamp-on flowmeter	Ultrasonic Flow Meter PCE-TDS 200+ SL	<ul style="list-style-type: none"> • Measuring range +/- 32 m/s • LC colour grafic display • Internal data memory, csv-export, analyzing app • USB interface • Start/stop up to 12 hr • Pipe diameter DN 15 - 100 mm • Optional: pipe DN 300 - 6000 mm • Heat flow measuring 	PCE systec Controls	2		

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4	Mobile photometer	DR1900 VIS Portable Spectrophotometer	<ul style="list-style-type: none"> Wavelength 436, 517, 557, 594, 610, 690 + 860 Custom methods Data memory min. 1000 measurements Calibration procedure USB / RS232 interface 	Xylem (WTW); Hach	2		
5	Photometer Cuvette tests for photometer	Cuvette tests for water contaminants	<p>Including Cuvette Tests for high to very high measuring range: parameters:</p> <ul style="list-style-type: none"> COD up to 600 mg/l COD up to 10000 mg/l TOD up to 3000 mg/l BOD5 up to 1600 mg/l Ammonium up to 1800 mg/l Phosphate up to 20 mg/l Anionic surfactants Nonionic surfactants Cationic Surfactants Cyanide Phenols Chlorine, Ozone, ClO₂ Formaldehyde <p>Heavy Metals:</p> <ul style="list-style-type: none"> Cd, CrIII/CrVI Cu Ni Mb 	HACH	1 by parameter		

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			<ul style="list-style-type: none"> • Lead • Sn • Zn 				
6	Water multi parameter portable meter	HACH HQ4200	<ul style="list-style-type: none"> • pH/mV/Temp/ISE • Conductivity/Salinity/spec. resistivity, TDS • Ion conc. Mg/l / mmol / ppm% • Temp. 5 - 105 °C • Salinity • TDS up to 199 g/l • Buffer solutions, calibration • Interface USB 	(a) HACH (b) Xylem (WTW);	2		
7	Soundmeter	TESTO Sound level meter testo 815	<ul style="list-style-type: none"> • 32 bis 130 dB 	Testo	3		
8	Vibration meter	Extech SDL 800	<ul style="list-style-type: none"> • Measuring range acceleration: 0.5 - 199 m/s²; 0.05 - 20.39G; 2 - 656 ft/s² • Measuring range vibration displacement: 0.001 - 1.999 mm; 0.001 - 0.078 inches • Speed measuring range: 0.5 - 199.9 mm/s; 0.05 - 19.99 cm/s; 0.02 - 7.87 inch/s • Possible SD memory card size: 1 GB - 16 GB • Display interval 1 s • Adjustable logger interval: 0/1/2/5/10/30/60/120/300/600/1800/3600 s • Sensor Ø: 16 mm 	Teledyne FLIR	2		

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9	Multi-Measuring Workplace evaluation	Bappuevo	<ul style="list-style-type: none"> • Air temperature and dew point • Relative humidity • Noise level (class 2) with C-peak up to 137dB • flicker frequency • Illuminance (class C) • screen brightness • luminance contrasts • with modules for VOC, CO, particulate matter • software • data logger 	ELK - Gesellschaft für Erstellung, Layout und Konzeption elektronischer Systeme mbH	2		