

# Energy Management Centre - Kerala (Department of Power, Govt of Kerala)

# CERTIFICATE OF EMPANELMENT

This is to certify that **M/s.Athul Energy Consultants Pvt Ltd**(4/2, Capital Legend Building, Korapath Lane, Rouund North, Thrissur)is empanelled as Energy Audit firm in Energy Management Centre Kerala to conduct mandatory energy audit as per Government of Kerala G.O (Rt) No.2/2011/PD dated 01.01.2011.

# Empanelment No: EMCEEA-0811F-3

Sagna / Arros	Building	Industry -Electrical	Industry Thermal
Scope/Area	Yes	Yes	Yes

This empanelment is valid up to 01/02/2024

Issuing Date: 02/02/2021

 ${\it Place: Thiruvan} anthapuram$ 

Director,

Energy Management Centre - Kerala

	Info	rmation of firm
1.	Name & address of the firm	ATHUL ENERGY CONSULTANTS PRIVATE LIMITED 4/2, Capital Legend Building, Korappath Lane, Round North Thrissur, Kerala - 680020
	Office(with STD)	
	Mobile	+91 735611199/0-6
	Fax number	
2.	Website (if any)	www.athulenergy.com
3.	Email address i n f o @ a	t h u l e n e r g y . c o m
4.	Name ,Designation and address of Contact person	SANTHOSH. A Managing Director
		Athul Energy Consultants Pvt. Ltd. 4/2, Capital Legend Building, Korappath Lane, Round North Thrissur, Kerala- 680020
5.	Office(with STD)	
	Residence(with STD)	9746194984
	Mobile	+91 7356111990
6.	Email address s a n t h o s h a a	t h u l e n e r g y . c o m
7.	Year of establishment	2011
8.	Year of commencement of energy audit by the firm.	2011
9.	No. of branch offices (List of complete addresses including heads of all branch offices with telephone, fax and email addresses)	NIL

	Details of Associated Energy Expe	rts and Audits Conducted by <u>firm</u>	
1.	Number of resource persons available	07	
2.	Number of full-time energy auditors in position, with work experience of all energy auditors associated with the firm	03	
3.	No. of part-time energy auditors in position during the current year / previous year associated with the firm.	02	
4.	Sectors in which the energy audit firm has conducted energy audits since inception and number of audits in each sector	<ul> <li>Buildings – 45</li> <li>Tea – 7</li> <li>Rubber – 5</li> <li>Food Processing – 4</li> <li>Dairy – 14</li> <li>Textile – 5</li> <li>Iron steel &amp; Aluminum – 22</li> <li>Chemical – 08</li> <li>Engineering – 42</li> <li>Tyre &amp; tyre Related company – 3</li> <li>Printing – 15</li> <li>Hospitals – 12</li> <li>Mines – 22</li> <li>Ayurveda – 4</li> <li>Power Quality Study-5</li> <li>Hotels – 4</li> <li>Electrical Safety Audit – 241</li> <li>LT Audits – 40</li> </ul>	
5.	Energy audit process system (list sectors) - If no energy audit has been carried out of the process system and parameters, please list nil.	Chemical, Steel, Printing, Coir and Jute, Granite Crushing, Assembly Line, Electronic Components, Ayurveda and Herbs, Tea, Flour Mill etc.	
6.	Energy audit of thermal utility system (list sectors)	Coir and Jute. Bread, Rubber Retreading. Tea, Chemical, Hot printing, Ayurveda medicines. Diary etc	
7.	Energy audit of electrical utility system (list sectors)	Coir and Jute, Bread, Rubber Retreading, Spice, Corporate Offices, Hotels, Hospitals, Data centres, Banks, Mattresses, Flour mill., Printing, Electronic components, Crushers, Steel, Asbestoses, , Etc.	

8.	Instruments available	(a) Electrical (list the name of the instruments)	3
		(b) Thermal (list the name of the instruments)	10.Fluke, mini 62 Infra-red thermometer 11.Flue gas analyzer Testo 330L 12.Vane flow meter, Metravi 13.Thermal Imager FlirE50

		*Bio data of Ce	rtified Energy Auditor	
1	Name of er	nergy auditor	Santhosh. A	
2.	Qualifications.		B. Tech (Mechanical)	
3.	Experience. (use additional sheet if required)  Residence(with STD)		25 Years in industry and conducted more than 70 energy audits	
4.			+91 9746194984	of the Allen
5.	Mobile		+91 7356111990	1
6	Email address	santhosh@athulenergy.c	om	
7	Manager o specify) by	tification as Energy r Energy Auditor (pl Bureau of Energy BEE) ( if not appeared	4 <sup>th</sup> September 2008	
8	in "Energy F	sing the examination Performance It for Equipment and It is a second or continuous conti	11 <sup>th</sup> February 2010	
9	of (i) Energy N (ii) "Energy Assessmen Utility Syste ( In case of	Performance It for Equipment and It ms" Certified Energy ase write CEA	EA-7597	
10	of (i) Energy N (ii) "Energy	Performance t for Equipment and	For Energy Manager 3105 For Energy Performance 5098	
11	auditor. If so: Date	BEE accredited Energy of accreditation editation No.	Yes AEA 0275 02/11/2017	
	Remarks( if any)  Additional Qualifications after B. Tech  PG Diploma in Energy Management (Hyderabad Central University)  Diploma in Energy Engineering  MBA (Energy Management) External Faculty (PCRA)		rsity)	

#### **Biodata of Accredited Energy Auditor:**

#### **SANTHOSH A**

# (Accredited Energy Auditor)

Qualification : B. Tech (Mechanical)

Experience : 20 years

Date of Certification

11/02/2010

as Energy Auditor/AEA

Registration Number of AEA-0275
Accredited Energy Auditor/AEA EA - 7597

Mobile : +91 7356111990

E-Mail : santhosh@athulenergy.com

#### PROFESSIONAL EXPERIENCE

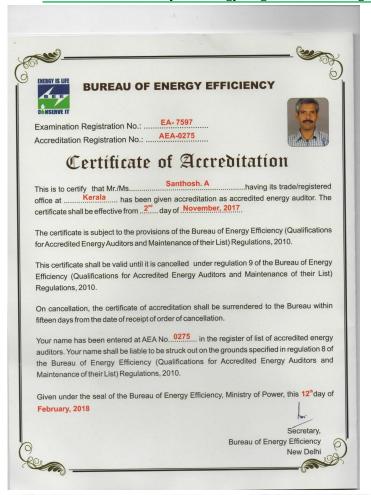
➤ 20 years' Transnational experience in hard core chemical & Process industries at core executive level as a mechanical engineer.

- Executed & managed critically important industrial operations in high risk environments.
- ➤ Possess a solid Engineering instinct with a perfect amalgamation of mass management in multiple area interlinked operations.
- ➤ Well exposed to the realities and vivid engineering problems barring the barrier of individual states.
- Associated with the industrial corporate of India viz. Hindustan lever, Tata, Birla, Jyothi laboratories etc.
- ► Have vivid exposure and seasoned training in the following areas.
  - Soap and Detergent Industry.
  - Petrochemicals.
  - Pharma Ingredients.
  - Agro Chemicals.
  - Spice extracts and food packaging.
  - Toxic and Hazardous chemical products.
  - Dye Intermediates
  - Drug & pharmaceutical industry
  - Solvent Extractions.

#### **PREVIOUS EMPLOYERS & ASSOCIATES**

- ❖ Tata vasishti Detergents Ltd, Chiplune, Maharashtra, India.
- Hindustan Lever Ltd, Chiplune, Maharashtra, India.
- Kesar Petrochemicals Ltd, Chiplune, Maharashtra, India.
- Sriman Organic Chemical Industries Ltd, Tharapur, Maharashtra, India.
- ❖ Zenith Chemicals Ltd (A Unit of Yash Birla Group), Tharapur, Maharashtra, India.
- Jyothi Laboratories Ltd, Indore, Madhya Pradesh.

- Gujarat Agro Chemicals Ltd, Ankaleshwar, Gujarat, India.
- ❖ Aarathi Drugs Ltd, Ankaleshwar, Gujarat, India.
- ❖ Kancor Ingredients Ltd, Angamaly, Kerala, India.
- ❖ Energy Conservation Society, (An NGO working in the Energy –Environmental sector).
- Treasurer of Society of Energy Engineers & Managers.





	*Bio data of	Certified Energy Auditor
1	Name of energy auditor	K. K. Babu
2.	Qualifications.	B. sc. Engineering (Electrical)
3.	Experience. (use additional she if required)	et 34 Years
4.	Residence(with STD)	0485-2207204
5.	Mobile	+91 9447987935
6	Email babukilinal@gmail.d	om
7	Date of certification as Energy Manager or Energy Auditor (pl specify) by Bureau of Energy Efficiency (BEE) ( if not appear list as nil	18 <sup>th</sup> November 2005
8	Date of passing the examination in "Energy Performance Assessment for Equipment and Utility Systems"	30 <sup>th</sup> April 2006
9	Examination Registration Numl of (i) Energy Manager	er EA-2422
	(ii) "Energy Performance Assessment for Equipment and Utility Systems" ( In case of Certified Energy Auditor, please write CEA Registration No.)	
10	Certificate Registration Numbe (i) Energy Manager (ii) "Energy Performance Assessment for Equipment and Utility Systems"	of For Energy Manager - 0657 For Energy Performance -2231
11	Are you a BEE accredited Ener auditor. If so: Date of accreditation Accreditation No.	gy No
	Additional Qualifications after B	Remarks( if any)
	Having Advanced Diploma in Ma	agement from IGNOU

#### K. K. BABU

# (Certified Energy Auditor)

Qualification : B.Sc. Engineering (Electrical)

Experience : 34 years

Date of Certification

as Energy Auditor : 30/04/2006

Registration Number of Energy Auditor : EA-2422

Mobile : +91 9447987935 Residence : 0485-2207204

E-Mail : bmassociates1949@gmail.com

babukilinal@gmail.com

#### PROFESSIONAL EXPERIENCE

Retired as Dy. Chief Engineer from Kerala State Electricity Board(KSEB) in 2004. Entered in service as Asst. Engineer and completed 30 years of Service (1974 – 2004).

#### **Responsibilities held:**

- 1. Electrical Design, Planning and Estimation:
  - ➤ Design, Planning and Estimation of various Electrical Installations (LT & HT)
  - Design, Construction, Operation and Maintenance
  - ➤ Undertaken Design, Construction, Operation and Maintenance of various Distribution Systems (LT & HT), Transmission Lines and Substations (EHT), and Generating Stations.
- 2. System Operation and Load Despatching:
  - ➤ Involved in functions like Grid Management, Load Generation Balance and Water Management which were highly challenging under ABT regime.
- 3. Human resource management:
  - Always tried to motivate the supporting Engineers & Technicians and enhanced their service skills and competencies.
- 4. Major Achievements:
  - ➤ Directly involved in the construction and commissioning of 3 Nos. EHT Substations and 2 Nos. EHT Transmission Lines.
  - As Dy. Chief Engineer in charge of Grid Management, led a team of dedicated Engineers and Technicians to successfully implement Availability Based Tariff (ABT) in KSEB.

#### AS AN ENERGY CONSULTANT

- Bcubenergy Systems, Cochin. (Energy Management Consultants)
   Senior Consultant, Jan 2007 Oct 2009
- Connect It, Palarivattom, Kochi. (Electrical Consultants)
   Chief Consultant, Feb 2007 Oct 2009
- ❖ BM Associates, Kochi, Kerala. (Electrical & Energy Management Consultants) Chief Consultant, 2009-11.

Regn. No. EA-2422



No. 2231

# **National Productivity Council**

(National Certifying Agency)

# PROVISIONAL CERTIFICATE

Вави КК

This is to certify that Mr. | Ms. ..... son | daughter of Mr. ..... Korath Y

has passed the National Certification Examination for Energy Auditors in 2006, conducted on behalf of the Bureau of Energy Efficiency, Ministry of Power, Government of India.

He | She is qualified as Certified Energy Manager as well as Certified Energy Auditor.

He | She shall be entitled to practice as Energy Auditor under the Energy Conservation Act 2001, subject to the fulfillment of qualifications for the Accredited Energy Auditor and issue of certificate of Accreditation by the Bureau of Energy Efficiency under the said Act.

This certificate is valid till the issuance of an official certificate by the Bureau of Energy Efficiency.

Place : Chennai, India

Date: 30" April 2007

Controller of Examination

	*Bio data of Certified Energy Auditor				
1	Name of energy auditor	Ashok K M P			
2.	Qualifications.	B. Tech Electrical ME Energy engineering			
3.	Experience. (use additional sheet if required)	05 Years			
4.	Residence(with STD)	8547800305			
5.	Mobile	7356111991			
6	Email ashok@athulenergy.com address				
7	Date of certification as Energy Manager or Energy Auditor (pl specify) by Bureau of Energy Efficiency (BEE) ( if not appeared lis as nil	10 <sup>th</sup> March 2017			
8	Date of passing the examination in "Energy Performance Assessment for Equipment and Utility Systems"	NIL			
9	Examination Registration Number o	f EA-25612			
	(i) Energy Manager	-1			
	<ul><li>(ii) "Energy Performance Assessme for Equipment and Utility Systems"</li><li>(In case of Certified Energy Auditor please write CEA Registration No.)</li></ul>				
10	Certificate Registration Number of	For Energy Manager - 8078			
	(i) Energy Manager				
	(ii) "Energy Performance Assessme for Equipment and Utility Systems"	nt			
11	Are you a BEE accredited Energy auditor. If so:	No			
	Date of accreditation Accreditation No.				
	Additional Qualifications after B. Tec	emarks( if any)			
		<u></u>			
	<ul><li>Griha Certified Professional</li><li>ETAP certified holder</li></ul>				
	MNRE certified Solar profession	nal			
	CE&QIP Grid Connected Solar      CE    CE	• •			
	Design & installation of Solar P	v off grid & on grid (NIWE)			

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# ASHOK K. M. P. (Certified Energy Manager)

Educational Qualification : B. Tech (Electrical)

M tech (Energy engineering)

Experience : 5 Years

Date of Certification

as Energy Manager : 10/03/2017

Registration Number of Energy Manager

: EA - 25612

Mobile : +91 7356111991

E-Mail : ashok@athulenergy.com

#### **EXECUTIVE SUMMARY**

- Possess extensive experience in Energy Auditing, Energy Conservation Training, supervising and managing energy efficiency programs and policy planning initiatives;
- Has closely worked with many energy experts, government agencies and civil groups to promote energy conservation objectives;
- Has the ability to provide leadership to new and innovative initiatives.
- An energy manager trained in the various electrical & mechanical design and certified personal.
- Has widely participated in the energy conservation activities even during the academics' period.
- Was state representative from the college in the NSS tech cell and student coordinator for various Social groups such as Nature club & Debate club.
- Passionately worked in the Malabar cements Ltd, a cement factory in Kerala, for 2 years
  and had exposed to electrical and mechanical systems, by doing the wholesome project
  on the Renovation and maintenance of Bag filter of the company.
- Started working in the Athul Energy in the latter part of 2012 as project engineer later on become one of the Directors of the company.
- Since then, he leads in more than 100 energy and safety audits and identified improvement opportunities for many Industries.
- Carried out many case studies especially focused on the Power quality issues on various industries and Distribution sectors.
- Since then he is actively participated in various NGO in the Energy conservation fields such as SEEM, GRIHA, ECS etc.

#### Core Accomplishments in the Field of Energy and Environment

- Certified Energy Manager, Certified by Bureau of Energy Efficiency, under Department of Power, Govt. of India (EA - 25612)
- **ETAP** certified holder.
- **❖** GRIHA certified professional (2017-19)
- **Teaching faculty for Energy Conservation society's budding engineers program.**

# Leadership Capability Chart

Association/ Organization	Responsibility/ Posts Held
SEEM	Member
ECS	Member & faculty



# Company registration certificate:

#### 1. CIN



#### GOVERNMENT OF INDIA MINISTRY OF CORPORATE AFFAIRS

Central Registration Centre

#### **Certificate of Incorporation**

[Pursuant to sub-section (2) of section 7 of the Companies Act, 2013 and rule 8 the Companies (Incorporation) Rules, 2014]

I hereby certify that ATHUL ENERGY CONSULTANTS PRIVATE LIMITED is incorporated on this Twenty seventh day of September Two thousand sixteen under the Companies Act, 2013 and that the company is limited by shares.

The CIN of the company is U74999KL2016PTC046898.

Given under my hand at Manesar this Twenty seventh day of September Two thousand sixteen

MANGAL RAM MEENA Deputy Registrar of Companies

Central Registration Centre

For and on behalf of the Jurisdictional Registrar of Companies

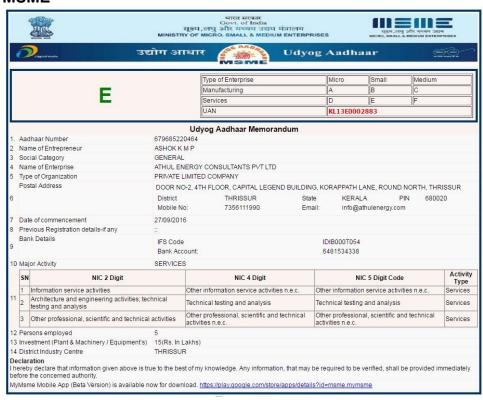
Mailing Address as per record available in Registrar of Companies office:

ATHUL ENERGY CONSULTANTS PRIVATE LIMITED

KEERAMKULANGARA WARRIAM, KORAPPATHU LANE, THRISSUR, Thrissur, Kerala, India, 680020



#### 2. MSME



### 3. PAN card



### 4. GST certificate



Government of India
And
Government of Kerala
Form GST REG-25

# Certificate of Provisional Registration

1.	GSTIN 32AAOCA8529M12		Z6
2.	PAN	AAOCA8529M	
3.	Legal Name ATHUL ENERGY		CONSULTANTS PRIVATE LIMITED
4.	Trade Name Athul Energy Consu		ultants Private Limited
5.	Registration Details under Existing Law		
	A	act	Registration Number
(a)	Service Tax Registration Number		AAOCA8529MSD001
(b)	Corporate Identity Number / Foreign Company Registration Number		U74999KL2016PTC046898
Date	28/06/2017		

This is a Certificate of Provisional Registraion issued under the provisions of the Act.

Measuring instrument list of Athul Energy Consultants Pvt Ltd, Kerala

S	Ma	Model	rument list of Athul Energy Co Measures	Components/m	Specification
l	ke	Model	Ficusures	easuring probes	Specification
- n				cusuring proses	
0					
	POW	ER QUAL	ITY ANALYSER		
1	Kry	ALM	<ul> <li>Voltage, Current, Frequency</li> </ul>	Ampflex CT - 4	0 - 10000A CAT IV with
	kar	35	KW, KVA, KVAr, Distorted	nos	+/-
	d		kVAr		0.5% CT Accuracy
			<ul><li>PF, Cosø, Tanø</li><li>4 Quadrant Energy: Wh, VAh,</li></ul>		
			VArh, Dh (Distortion Energy)		
			• Short-term Flicker, FHL, CF,		
			K-Factor		
			• THDf, THDr on V, U & I		
			Harmonics up to 50 order		
			V & I Transients		
			• Complies with IEC 61000-4-30 measurement standard		
			under Class B		
			under Glass D	Voltage probes -	2 - 2000V CAT IV
				5 nos	
				MN 93A clamp	0-100 A CAT IV with +/-
				CT - 4 nos	0.5% CT Accuracy
				PAC 93 AC/DC	1000A ac & 1000A dc
				clamp CT - 3 nos	with +/- 0.5% CT Accuracy
2	Kry	ALM	Voltage, Current, Frequency	Ampflex CT - 4	0 - 10000A CAT IV with
	kar	30	• KW, KVA, KVAr,	nos	+/-
	d		<ul> <li>PF, Cosø, Tanø</li> </ul>		0.5% CT Accuracy
			• 4 Quadrant Energy: Wh, VAh,		
			VArh,		
			<ul> <li>Short-term Flicker, FHL, CF, K-Factor</li> </ul>		
			• THDf, THDr on V, U & I		
			Harmonics up to 50 order		
			• Complies with IEC 61000-4-		
			30 measurement standard		
			under Class B	77.1.	0. 000011 CATE III
				Voltage probes - 5 nos	2 - 2000V CAT IV
				MN 93A clamp	0-100 A CAT IV with +/-
				CT - 4 nos	0.5% CT Accuracy
_		4===		Int. cooper	0.0000 4
3	FL	1730	Voltage, Current, Frequency	iFlex3000-24	0-3000 A with +/- 1% CT
	UK E		• KW, KVA, KVAr,	flexible CT - 4 nos	Accuracy
	Ľ		<ul><li>PF, Cosø, Tanø</li><li>4 Quadrant Energy: Wh, VAh,</li></ul>	1103	
			VArh		
			THDf, THDr on V, U & I		
			Harmonics up to 50 order		
				Voltage probes -	0-1000V with +/- 0.2%
_	ME			4 nos	Accuracy
4	ME	power	Single phase analyser		
	CO	guard - 09	• Range - 0-20 A with accuracy level of class 1		
5	Kry	F407	Three phase clamp on power		AC-DC current
,	kar	10,	analyser		measurement up to
	d		True inrush current upto		1000A with +/- 1%

1500A  A C-DC power measurements PF, DPF measurement with individual harmonics up to 25th order.  S Ma l ke n O  TEMPERATURE/CLIMATE ANALYSER  5 TE 480 Humidity (%RH, td°C, d°F, difference-°C, difference-°F)  - Humidity (%RH, td°C, td°F, wet bulb °C, wet bulb °F, g/m3, g/ft3, g/kg, g/lb, k]/kg, BTU/lb, ppm, Vol%  - Flow velocity (m/s, ft/m)  Pressure (Pa, hPa, mbar, kPa, bar, psi, inH2O, inHg, mmH2O, Torr  - CO2 (ppm, Vol%)  - Memory capacity For approx.  AC-DC voltage measurement upto 1000V with +/- 1% accuracy.  AC-DC voltage measurement upto 1000V with +/- 1% accuracy.  AC-DC voltage measurement upto 1000V with +/- 1% accuracy.  AC-DC voltage measurement upto 1000V with +/- 1% accuracy.  AC-DC voltage measurement upto 1000V with +/- 1% accuracy.  AC-DC voltage measurement upto 1000V with +/- 1% accuracy.  AC-DC voltage measurement upto 1000V with +/- 1% accuracy.  AC-DC voltage measurement upto 1000V with +/- 1% accuracy.  S Ma Model Reasuring probes  - Memory capacity For approx.  AC-DC voltage measurement upto 1000V with +/- 1% accuracy.  AC-DC voltage measurement upto 1000V with +/- 1% accuracy.  AC-DC voltage measurement upto 1000V with +/- 1% accuracy.  AC-DC voltage measurement upto 1000V with +/- 1% accuracy.  S Ma Dove in the sacrification  - Specification  - CO2 - 0 to 10000 ppm Humidity - 0 to 1000 RI Temperature - 0 to 50 degC  - Humidity (%RH, td°C, td°F, wet bulb °F, g/m3, g/kg, g/l53, g/kg, g/l543) - 1 no  - Humidity (%RH, td°C, td°F, wet bulb °F, g/m3, g/kg, g/l543) - 1 no  - Humidity (%RH, td°C, td°F, wet bulb °F, g/m3, g/kg, g/l543) - 1 no  - Humidity - 0 to 10000 ppm Humidity - 0 to 1000 m/s of the probe with telescope (0635 1543) - 1 no  - Humidity - 0 to 10000 m/s of the probe with telescope (0635 1543) - 1 no  - Humidity - 0 to 10000 m/s of the probe with telescope (1635 1543) - 1 no  - Humidity - 0 to 10000 m/s of the probe with telescope (1635 1543) - 1 no  - Humidity - 0 to 10000 m/s of the probe with telescope (1635 1543) - 1 no  - Humidity - 0 to 10000 m/s of the probe with telescop	00
TEMPERATURE/CLIMATE ANALYSER  TEMPERATURE/CLIMATE ANALYSER  TE	00
5 TE ST O         480         • Temperature (°C, °F, difference-°C, difference-°C, difference-°F)         IAQ probe (0632 1543) - 1 no         CO2 - 0 to 10000 ppm Humidity - 0 to 100% RI Temperature - 0 to 50 degC           • Humidity (%RH, td°C, td°F, wet bulb °C, wet bulb °F, g/m3, g/ft3, g/kg, g/lb, k]/kg, BTU/lb, ppm, Vol%         Pitot tube (0635 2045) - 1 no         Flow velocity1 to 100 m/s operating temperature - 0 to 600 degC           • Flow velocity (m/s, ft/m)         Hot wire probe with telescope (0635 1543) - 1 no         Temp -20 to 70 degC with telescope (0635 1543) - 1 no           • Pressure (Pa, hPa, mbar, kPa, bar, psi, inH2O, inHg, mmH2O, Torr         K probe - immersion (0602 1300 °C with accuracy class 1           • CO2 (ppm, Vol%)         • Memory capacity For approx.	00
ST difference-°C, difference-°F)  • Humidity (%RH, td°C, td°F, wet bulb °C, wet bulb °F, g/m3, g/ft3, g/kg, g/lb, k]/kg, BTU/lb, ppm, Vol%  • Flow velocity (m/s, ft/m)  • Pressure (Pa, hPa, mbar, kPa, bar, psi, inH2O, inHg, mmH2O, Torr  • CO2 (ppm, Vol%)  • Memory capacity For approx.  • Humidity - 0 to 100% RI Temperature - 0 to 50 degC  Flow velocity1 to 100 m/s operating temperature - 0 to 600 degC  Flow velocity1 to 100 m/s operating temperature - 0 to 600 degC  Flow velocity1 to 100 m/s operating temperature - 0 to 600 degC  Flow velocity1 to 100 m/s operating temperature - 0 to 600 degC  Flow velocity1 to 100 m/s operating temperature - 0 to 600 degC  Flow velocity1 to 100 m/s operating temperature - 0 to 600 degC  Flow velocity1 to 100 m/s operating temperature - 0 to 600 degC  Flow velocity1 to 100 m/s operating temperature - 0 to 600 degC  Flow velocity1 to 100 m/s operating temperature - 0 to 600 degC  Flow velocity1 to 100 m/s operating temperature - 0 to 600 degC  Flow velocity1 to 100 m/s operating temperature - 0 to 600 degC  Flow velocity1 to 100 m/s operating temperature - 0 to 600 degC  Flow velocity1 to 100 m/s operating temperature - 0 to 600 degC  Flow velocity1 to 100 m/s operating temperature - 0 to 600 degC  Flow velocity1 to 100 m/s operating temperature - 0 to 600 degC  Flow velocity1 to 100 m/s operating temperature - 0 to 600 degC  Flow velocity1 to 100 m/s operating temperature - 0 to 600 degC  Flow velocity1 to 100 m/s operating temperature - 0 to 600 degC  Flow velocity1 to 100 m/s operating temperature - 0 to 600 degC  Flow velocity1 to 100 m/s operating temperature - 0 to 600 degC	00
wet bulb °C, wet bulb °F, g/m3, g/ft3, g/kg, g/lb, kJ/kg, BTU/lb, ppm, Vol%  • Flow velocity (m/s, ft/m)  • Pressure (Pa, hPa, mbar, kPa, bar, psi, inH2O, inHg, mmH2O, Torr  • CO2 (ppm, Vol%)  • Memory capacity For approx.  2045) - 1 no  m/s operating temperature - 0 to 600 degC  Temp -20 to 70 degC with +/-0.5 deg C accuracy, Humidity 0 to 100% RH with +/- 1.8% accuracy, Velocity 0 to 20 m/s with +/- 0.03 m/s  Measuring range: -200 to +1300 °C with accuracy class 1	)
with telescope (0635 1543) - 1 Humidity 0 to 100% RH no with +/- 1.8% accuracy, Velocity 0 to 20 m/s wit +/- 0.03 m/s  Pressure (Pa, hPa, mbar, kPa, bar, psi, inH2O, inHg, mmH2O, Torr 5693) - 2 nos class 1  Pressure (Pa, hPa, mbar, kPa, bar, psi, immersion (0602 to 100% RH with +/- 1.8% accuracy, Humidity 0 to 100% RH with +/- 1.8% accuracy, Humidity 0 to 100% RH with +/- 1.8% accuracy, Humidity 0 to 100% RH with +/- 1.8% accuracy, Humidity 0 to 100% RH with +/- 1.8% accuracy, Humidity 0 to 100% RH with +/- 1.8% accuracy, Humidity 0 to 100% RH with +/- 1.8% accuracy, Humidity 0 to 100% RH with +/- 1.8% accuracy, Humidity 0 to 100% RH with +/- 1.8% accuracy, Humidity 0 to 100% RH with +/- 1.8% accuracy, Humidity 0 to 100% RH with +/- 1.8% accuracy, Velocity 0 to 20 m/s with +/- 0.03 m/s  Pressure (Pa, hPa, mbar, kPa, immersion (0602 to 100% RH with +/- 1.8% accuracy, Velocity 0 to 20 m/s with +/- 0.03 m/s  Measuring range: -200 to 100% RH with +/- 1.8% accuracy, Velocity 0 to 20 m/s with +/- 1.8% accuracy, Velocity 0 to 20 m/s with +/- 0.03 m/s  Measuring range: -200 to 100% RH with +/- 1.8% accuracy, Velocity 0 to 20 m/s with +/- 0.03 m/s  Pressure (Pa, hPa, mbar, kPa, immersion (0602 to 100% RH with +/- 1.8% accuracy, Velocity 0 to 20 m/s with +/- 0.03 m/s  Measuring range: -200 to 100% RH with +/- 1.8% accuracy, Velocity 0 to 20 m/s with +/- 0.03 m/s  Measuring range: -200 to 100% RH with +/- 1.8% accuracy, Velocity 0 to 20 m/s with +/- 0.03 m/s	⁄ith
bar, psi, immersion (0602 +1300 °C with accuracy inH2O, inHg, mmH2O, Torr 5693) - 2 nos class 1  • CO2 (ppm, Vol%)  • Memory capacity For approx.	y, rith
Memory capacity For approx.	
10000 measurement protocols	
FLI Thermal imager with a range of -20	
6 R E50 to 650 deg C Digital camera with 3.1MP resolution	
7 Flu ke	
FLUE GAS ANALYSER  9 Tog 220 Piffacutial accounts 200 to Probe (0554 Track 500 degC Probe	
8 Tes to Differential pressure -200 to 200 hPa, Absolute Pressure +600 to +1150 hPa, Flue gas $O_2$ - 0 to 25 Vol.%, Flue gas $O_2$ - 0 to 10000 ppm,. Temperature40 to +1200 °C,	
• Flue gas loss (calculated) Probe (0554 Tmax - 1000 degC, Probe 8764) - 1 no length - 300mm	be
• Flue gas dewpoint (calculated)	
<ul> <li>Flue gas CO<sub>2</sub> calculation</li> <li>Flue gas degree of effectivity,         Eta     </li> </ul>	
Storage max - 200 logs	
•	

S l n o	Ma ke	Model	Measures	Components/m easuring probes	Specification
	LUX	METER			
9	Am pro be	LM100	Range - 0 to 2 lakhs LUX		
	TACI R	номете			
1 0	Me tra vi	NCTM1 00	• range - 2 to 99,999 rpm with accuracy of +/- 0.05%		
			sampling time - 0.5 sec		
	INSULATION TESTER				
1	ME CO	DIT 99C	500 V, 200Mohm, Digital insulation tester		

I hereby state that information furnished above is true and correct to the best of my knowledge.

Place: Thrissur

Date: 25-04-2018

Santhosh A Managing Director