7.1.2	**Environmental Consciousness and Sustainability**
	The Institution has facilities for alternate sources of energy and energy conservation measures

1. Solar energy ☑
2. Biogas plant ☐
3. Wheeling to the Grid ☐
4. Sensor-based energy conservation ☑
5. Use of LED bulbs/ power efficient equipment ☑

Upload:

- ***Geo tagged Photographs***
- ***Any other relevant information***

Response

1) Solar Energy:

Solar PV System Installation Details:

i) Installed a 25 KW Solar PV System in B block building with Grid Connected Inverter.

ii) Installed a 5 KW Solar PV System in A block building with Grid Connected Inverter.

iii) Installed a 2 KW Solar PV System in D block building with Grid Connected Inverter.

iv) Installed 26 Numbers of 50 W Solar Street Lights inside the campus.

Fig: 7.1.2.1.a Solar PV Arrays (25 KW) in B Block

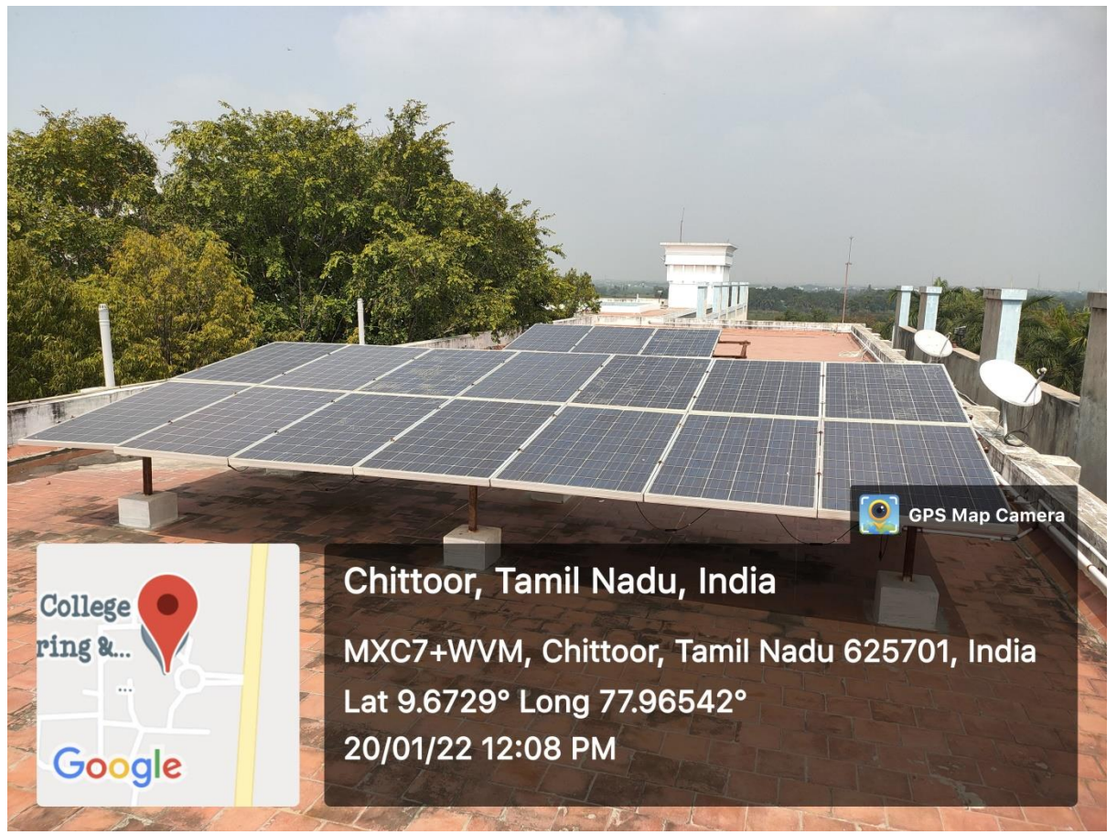


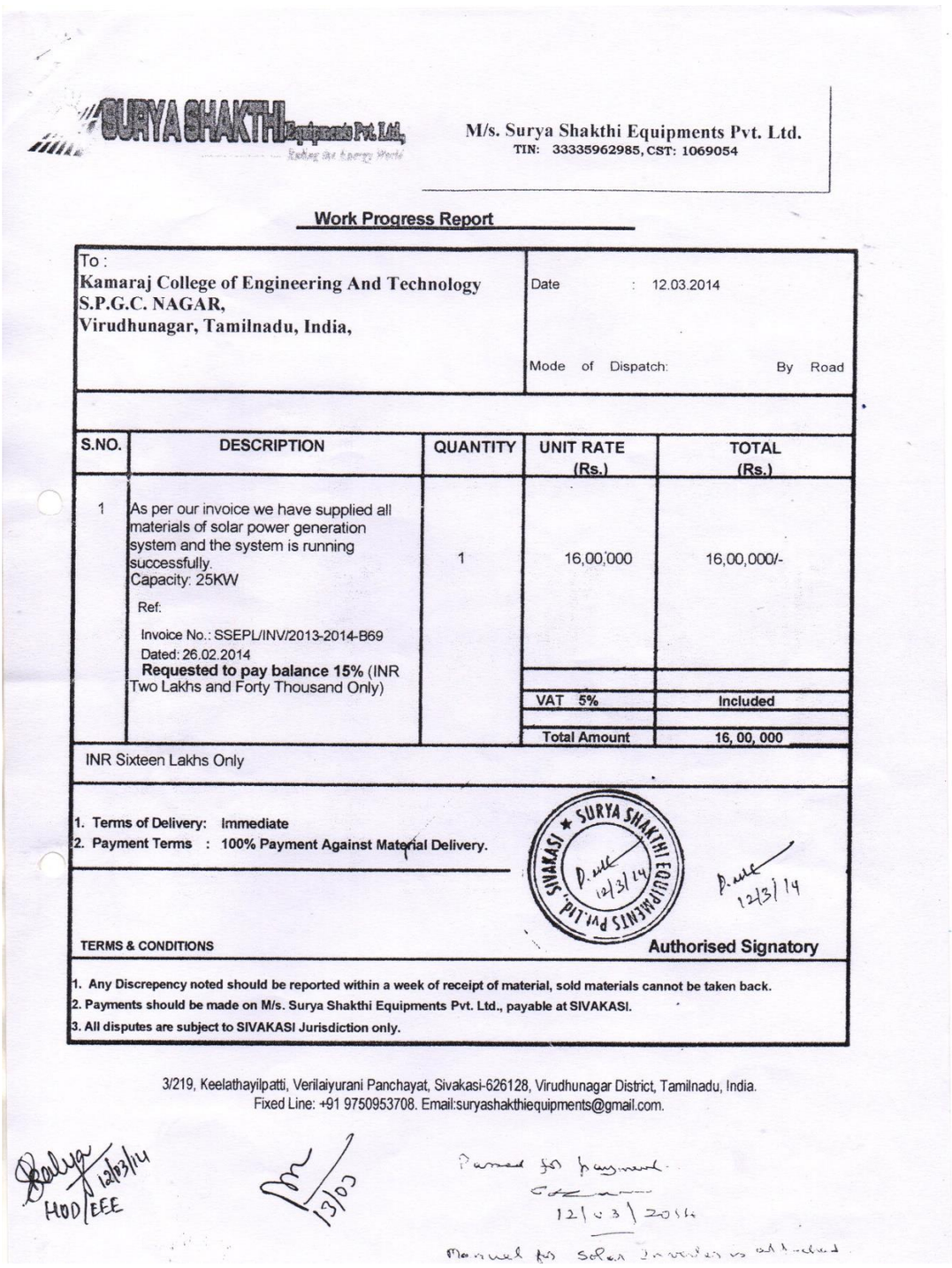
Fig: 7.1.2.1.b Solar PV Arrays (5 KW) in A Block

Fig: 7.1.2.1.c Solar PV Arrays (2 KW) in D Block

Fig: 7.1.2.2.a Grid Connected Solar PV Inverter in A Block

Fig: 7.1.2.2.b Grid Connected Solar PV Inverter in B Block

Fig: 7.1.2.2.c Solar Water Heaters in Girls Hostel



M/s. Surya Shakthi Equipments Pvt. Ltd.
TIN: 33335962985, CST: 1069054

Work Progress Report

To :
Kamaraj College of Engineering And Technology
S.P.G.C. NAGAR,
Virudhunagar, Tamilnadu, India,

Date : 12.03.2014

Mode of Dispatch: By Road

S.NO.	DESCRIPTION	QUANTITY	UNIT RATE (Rs.)	TOTAL (Rs.)
1	As per our invoice we have supplied all materials of solar power generation system and the system is running successfully. Capacity: 25KW Ref: Invoice No.: SSEPL/INV/2013-2014-B69 Dated: 26.02.2014 **Requested to pay balance 15%** (INR Two Lakhs and Forty Thousand Only)	1	16,00,000	16,00,000/-
			VAT 5%	Included
			Total Amount	16, 00, 000

INR Sixteen Lakhs Only

1. Terms of Delivery: Immediate
2. Payment Terms : 100% Payment Against Material Delivery.

SURYA SHAKTHI EQUIPMENTS PVT. LTD. SIVAKASI

12/3/14

12/3/14

TERMS & CONDITIONS

Authorised Signatory

1. Any Discrepency noted should be reported within a week of receipt of material, sold materials cannot be taken back.
2. Payments should be made on M/s. Surya Shakthi Equipments Pvt. Ltd., payable at SIVAKASI.
3. All disputes are subject to SIVAKASI Jurisdiction only.

3/219, Keelathayilpatti, Verilaiyurani Panchayat, Sivakasi-626128, Virudhunagar District, Tamilnadu, India.
Fixed Line: +91 9750953708. Email:suryashakthiequipments@gmail.com.

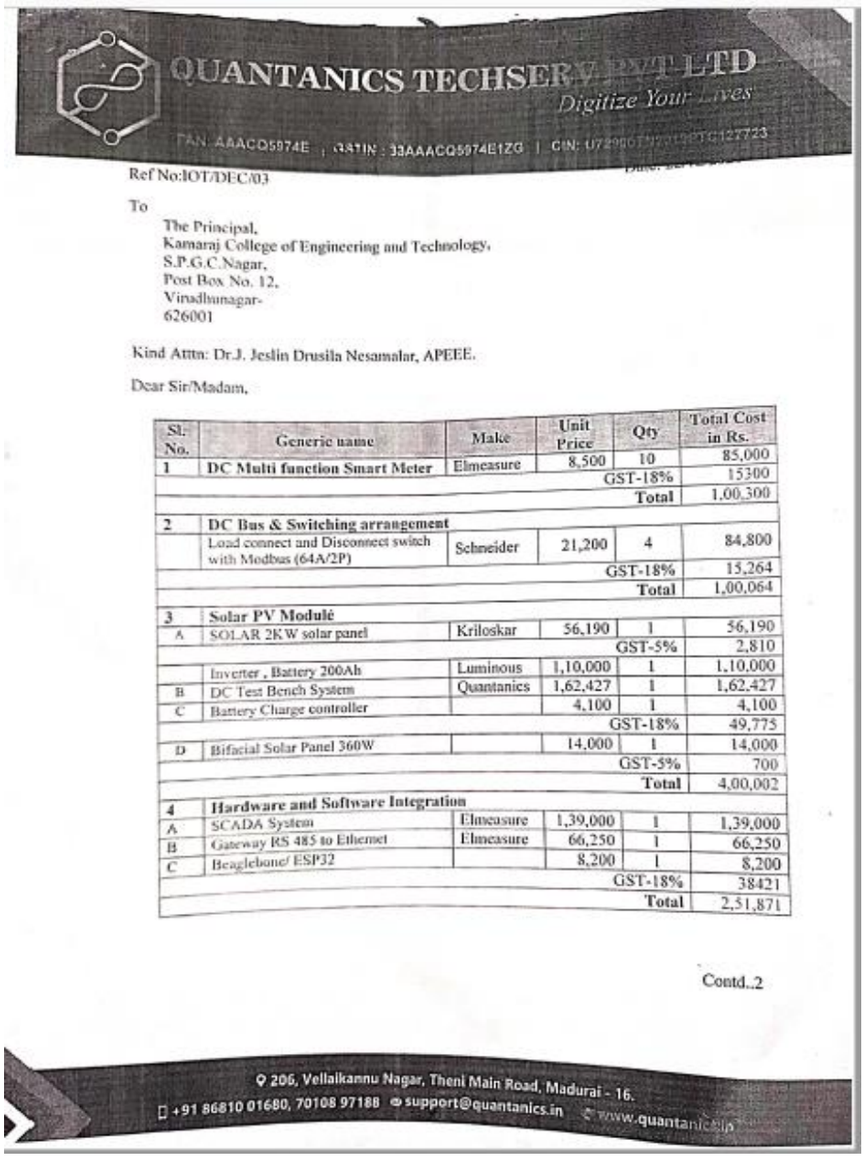
12/03/14
HOD/EEE

13/03

Passed for payment
12/03/2014

Manual for Solar Panels is attached

Fig: 7.1.2.3.a Bill Copy of Solar PV (25 KW) System



QUANTANICS TECHSERV PVT LTD
Digitize Your Lives
PAN: AAACQ5974E ; GSTIN : 33AAACQ5974E1ZG | CIN: U72900TN2021PTC127723

Ref No:IOT/DEC/03

To

The Principal,
Kamaraj College of Engineering and Technology,
S.P.G.C.Nagar,
Post Box No. 12,
Virudhunagar-
626001

Kind Attn: Dr.J. Jeslin Drusila Nesamalar, APEEE.

Dear Sir/Madam,

Sl. No.	Generic name	Make	Unit Price	Qty	Total Cost in Rs.
1	**DC Multi function Smart Meter**	Elmeasure	8,500	10	85,000
				GST-18%	15300
				Total	1,00,300
2	**DC Bus & Switching arrangement**				
	Load connect and Disconnect switch with Modbus (64A/2P)	Schneider	21,200	4	84,800
				GST-18%	15,264
				Total	1,00,064
3	**Solar PV Module**				
A	SOLAR 2KW solar panel	Kriloskar	56,190	1	56,190
				GST-5%	2,810
	Inverter , Battery 200Ah	Luminous	1,10,000	1	1,10,000
B	DC Test Bench System	Quantanics	1,62,427	1	1,62,427
C	Battery Charge controller		4,100	1	4,100
				GST-18%	49,775
D	Bifacial Solar Panel 360W		14,000	1	14,000
				GST-5%	700
				Total	4,00,002
4	**Hardware and Software Integration**				
A	SCADA System	Elmeasure	1,39,000	1	1,39,000
B	Gateway RS 485 to Ethernet	Elmeasure	66,250	1	66,250
C	Beaglebone/ ESP32		8,200	1	8,200
				GST-18%	38421
				Total	2,51,871

Contd..2

206, Vellaikannu Nagar, Theni Main Road, Madurai - 16.
+91 86810 01680, 70108 97188 support@quantanics.in www.quantanics.in

Fig: 7.1.2.3.b Bill Copy of Solar PV (2KW) System

2. Biogas Plant:

Nil.

3. Wheeling to the Grid:

Nil

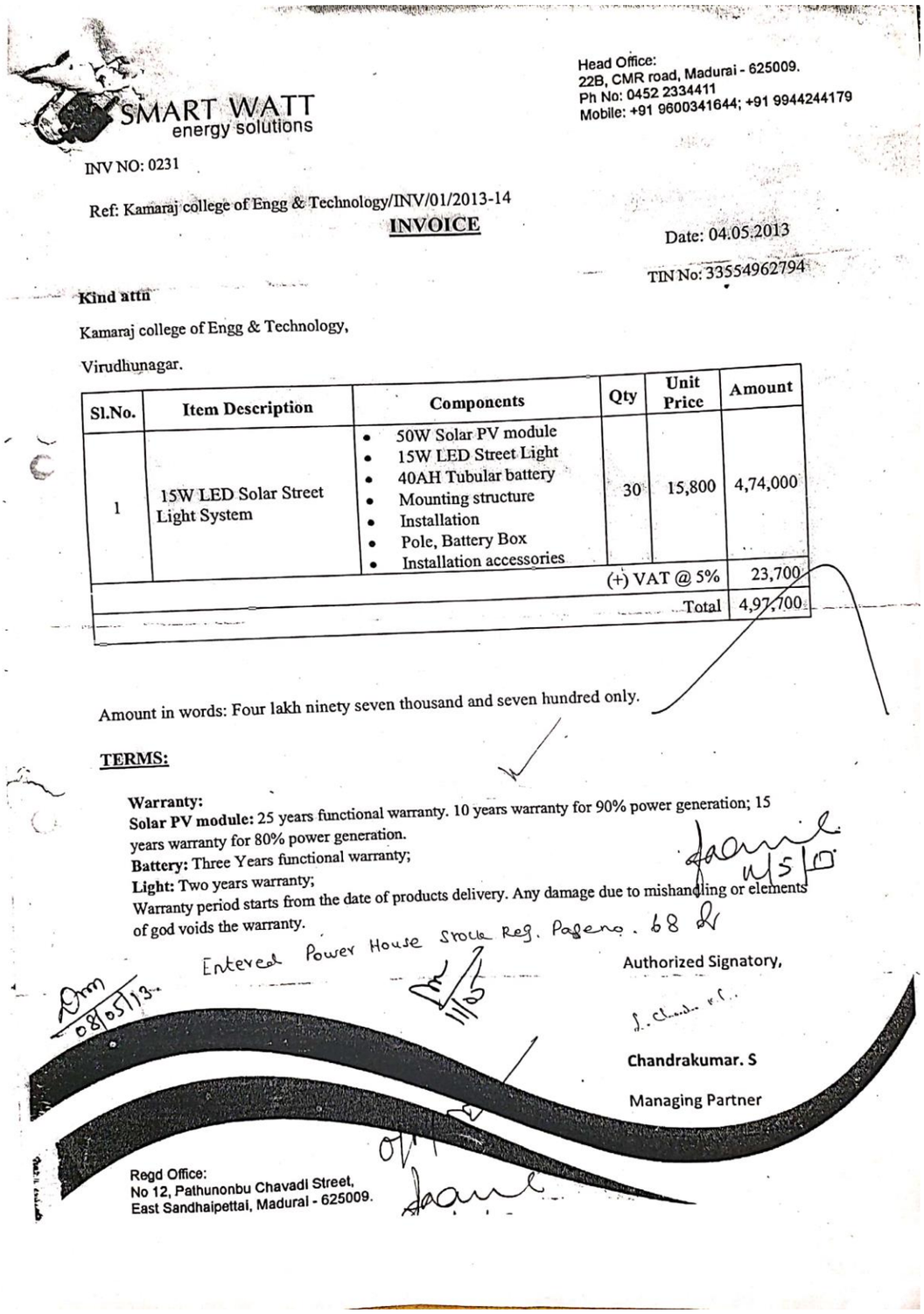
4. Sensor-based energy conservation:

All the solar street lights are featured with LDR Sensors and its advantages are as follows:

i) Energy-Saving, less pollution, reduces energy consumption.
ii) Simple in maintenance.

Based on the above advantages more solar powered LED street lights are being used for street light applications.

Fig: 7.1.2.4 Intelligent (LDR Sensor Based) Solar Street Lights



SMART WATT
energy solutions

Head Office:
22B, CMR road, Madurai - 625009.
Ph No: 0452 2334411
Mobile: +91 9600341644; +91 9944244179

INV NO: 0231

Ref: Kamaraj college of Engg & Technology/INV/01/2013-14

INVOICE

Date: 04.05.2013

TIN No: 33554962794

Kind attn

Kamaraj college of Engg & Technology,

Virudhunagar.

Sl.No.	Item Description	Components	Qty	Unit Price	Amount
1	15W LED Solar Street Light System	• 50W Solar PV module • 15W LED Street Light • 40AH Tubular battery • Mounting structure • Installation • Pole, Battery Box • Installation accessories	30	15,800	4,74,000
				(+) VAT @ 5%	23,700
				Total	4,97,700

Amount in words: Four lakh ninety seven thousand and seven hundred only.

TERMS:

Warranty:
Solar PV module: 25 years functional warranty. 10 years warranty for 90% power generation; 15 years warranty for 80% power generation.
Battery: Three Years functional warranty;
Light: Two years warranty;
Warranty period starts from the date of products delivery. Any damage due to mishandling or elements of god voids the warranty.

Entered Power House Stock Reg. Page no. 68

Authorized Signatory,

Chandrakumar. S

Managing Partner

Regd Office:
No 12, Pathunonbu Chavadi Street,
East Sandhaipettai, Madural - 625009.

Fig: 7.1.2.5 Bill Copy of Solar Street Light System

Automatic Water Level Controller:

Used for overhead water tank to fill water from the underground water tank.

Major benefits are

1. No overflow of overhead water tank - saves water.
2. No dry run of pump.
3. No damage to terrace due to over flowed water.
4. No wastage of electricity.

Fig: 7.1.2.6.a Float Sensors for Automatic Water Level Controller

Fig: 7.1.2.6.a .Starter for Automatic Water Level Controller

5. Use of LED Bulbs/ Power Efficient Equipment:

Energy saving is a national cause and all of us will have to join hands and make all out efforts in making India an energy efficient economy. By considering this national mission our institution has taken the following initiatives to use the power efficient equipment's like

I) LED Bulbs
II) 3 Star Air conditioners in air conditioned laboratories.
III) Energy Efficient Three Phase squirrel cage Induction Motors.

The advantages of LED Bulbs are as follows:

a) Extended Lifespan
b) Energy Efficient
c) Improved Safety with LEDs

d) Physically Small
e) Great Color Rendering Index (CRI)
f) Provide Instantaneous Turn On and Do Not Have Issues with Frequent Switching
g) Environmentally Safe
h) Produce Virtually Zero UV Emissions
i) Operated on Very Low Voltage

Due to these advantages the institution takes the initiatives to install LED Bulbs for lighting applications.

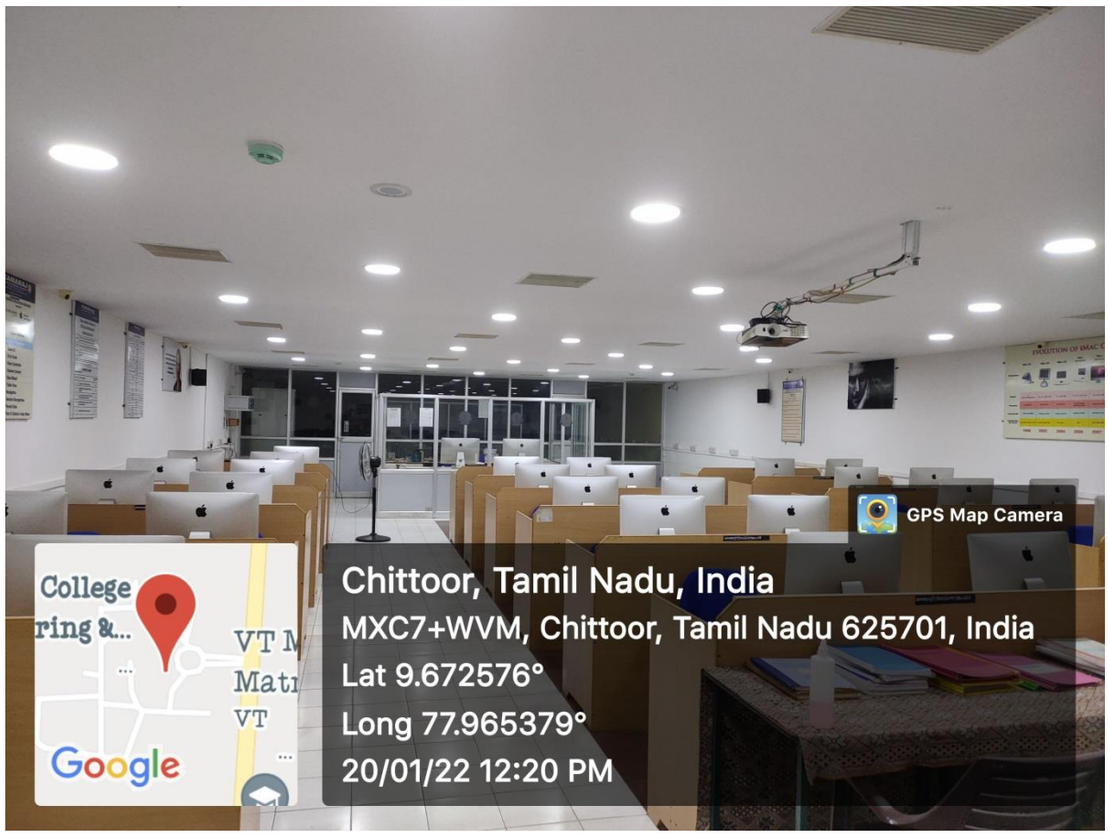
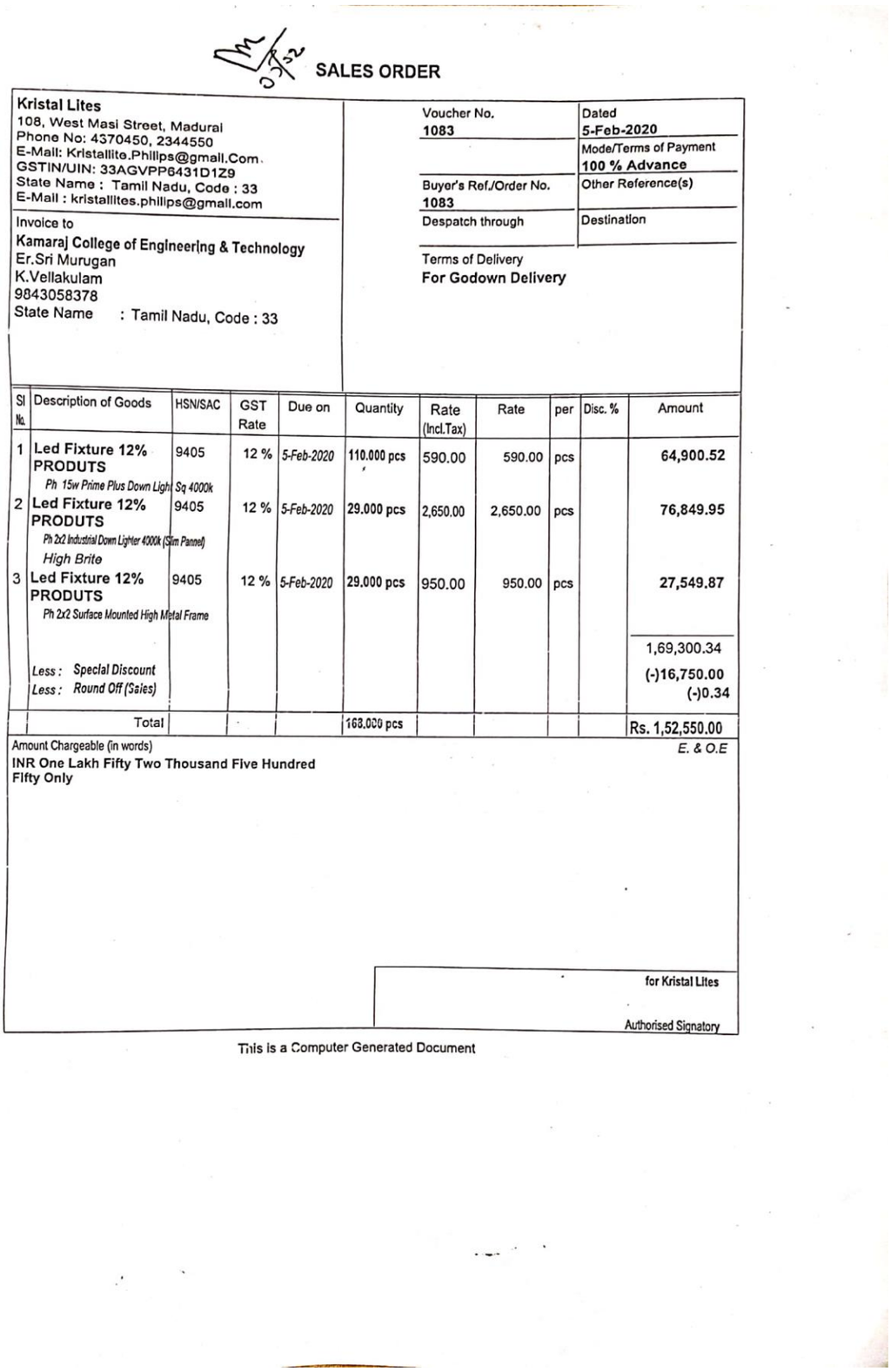


Fig: 7.1.2.7 LED Powered Lab

Total Lighting Load Requirement = 285.09 KW
Lighting Load met out by LED Bulbs = 22.01 KW
Totally 7.72 Percentage of lighting load is met out by LED bulbs.



SALES ORDER

Kristal Lites
108, West Masi Street, Madurai
Phone No: 4370450, 2344550
E-Mail: Kristallite.Philips@gmail.Com
GSTIN/UIN: 33AGVPP6431D1Z9
State Name : Tamil Nadu, Code : 33
E-Mail : kristallites.philips@gmail.com

Invoice to
Kamaraj College of Engineering & Technology
Er.Sri Murugan
K.Vellakulam
9843058378
State Name : Tamil Nadu, Code : 33

Voucher No.	Dated
1083	5-Feb-2020
	Mode/Terms of Payment: 100 % Advance
Buyer's Ref./Order No.: 1083	Other Reference(s)
Despatch through	Destination
Terms of Delivery: For Godown Delivery	

Sl No.	Description of Goods	HSN/SAC	GST Rate	Due on	Quantity	Rate (Incl.Tax)	Rate	per	Disc. %	Amount
1	**Led Fixture 12% PRODUTS** *Ph 15w Prime Plus Down Light Sq 4000k*	9405	12 %	5-Feb-2020	110.000 pcs	590.00	590.00	pcs		64,900.52
2	**Led Fixture 12% PRODUTS** *Ph 2x2 Industrial Down Lighter 4000k (Slim Panned)* *High Brite*	9405	12 %	5-Feb-2020	29.000 pcs	2,650.00	2,650.00	pcs		76,849.95
3	**Led Fixture 12% PRODUTS** *Ph 2x2 Surface Mounted High Metal Frame*	9405	12 %	5-Feb-2020	29.000 pcs	950.00	950.00	pcs		27,549.87
										1,69,300.34
	Less : Special Discount									(-)16,750.00
	Less : Round Off (Sales)									(-)0.34
	Total				168.000 pcs					Rs. 1,52,550.00

Amount Chargeable (in words) *E. & O.E*
INR One Lakh Fifty Two Thousand Five Hundred Fifty Only

for Kristal Lites

Authorised Signatory

This is a Computer Generated Document

Fig: 7.1.2.8 Bill Copy of LED Bulbs