



Karunya INSTITUTE OF TECHNOLOGY AND SCIENCES

(Declared as Deemed to be University under Sec.3 of the UGC Act, 1956)

MoE, UGC & AICTE Approved

NAAC A++ Accredited

2.1 Energy Efficient Appliances Usage

| S.No. | Existing Item | Modification |
|-------|--|---|
| 1. | Sodium or Halogen Lights | Sensor based LED Lights |
| 2. | Manual operated Overhead Tank | Automatic Sensor based Water Level Controller |
| 3. | Old model Lifts | V3f drive based energy efficient Lifts |
| 4. | Traditional water heater in hostels | Solar based Water heaters in hostels |
| 5. | Sodium or Halogen Street Lights in hostels | Solar powered Street Lights in hostels |
| 6. | CFL or Fluorescent Lights in corridors | Sensor based LED lights in Corridors |
| 7. | Classrooms with Fluorescent Lights | Classrooms with LED Tube Lights |

SOLAR STREET LIGHTING IN KARUNYA UNIVERSITY



Fig 1. Solar based Street Light

Total lights Installed in Karunya University are 7 lights

| Street Light Installed Place | Panel Used | No. of Lights | Present Condition |
|------------------------------|------------------|---------------|-------------------|
| Guest House | Crystalline Type | 4 | Working |
| Opposite to S&H Auditorium | Crystalline Type | 2 | Working |
| Mechanical Building Yard | Crystalline Type | 1 | Working |

Specifications for Solar Street Lights

Electrical Parameters

Panel Type : Crystalline Type
 Cell Type : High efficiency Solar Cells
 Nominal Capacity : 1*120 W
 Peak Power Voltage : 16.2 Volts
 Peak Current : 8.3 Amps
 Tolerance : $\pm 5\%$

Mechanical Parameters

Front cover glass : Toughened Glass
 Encapsulate : Ethylene Vinyl Acetate (EVA)
 Mounting frames : Anodized aluminium channel
 Rear panel : Polyvinyl Fluoride (PVF)
 Junction box : ABS moulded box
 Weight : 5.4 Kgs

Battery

Electrical Parameters

Normal capacity : 100 Ampere Hours
 Rated current Discharge : C/10
 Normal voltage : 12V
 Self-discharge : About 0.5% per week
 Expected life : About 1500 cycles

General parameters

Types : low maintenance lead acid
 Construction : 12V block
 Container material : polypropylene

Solar light controller:

Charge Controller Type And Rating : Series Pulsed Two Step 15A max.

Cable Assembly:

Module to Light Controller : 4.0 m² cable with ring terminal
Luminary to Lighting Controller : 1.5 m² dual sheathed cable
Battery to Lightning : 4.0 m² with ring and fork terminal

Solar Water Heating System In Karunya University Hostels



Fig 2. Solar roof top in the Main (Administrative Building)

The Institution has facilities for alternate sources of energy and energyconservation measures

| S. No | File Description | Page No. |
|-------|---|----------|
| 1 | Solar energy | 2 |
| 2 | Biogas plant | 4 |
| 3 | Sensor-based energy conservation | 5 |
| 4 | Use of LED bulbs/ power efficient equipment | 5 |



Fig 3. Solar roof top in the Main (Administrative Building)

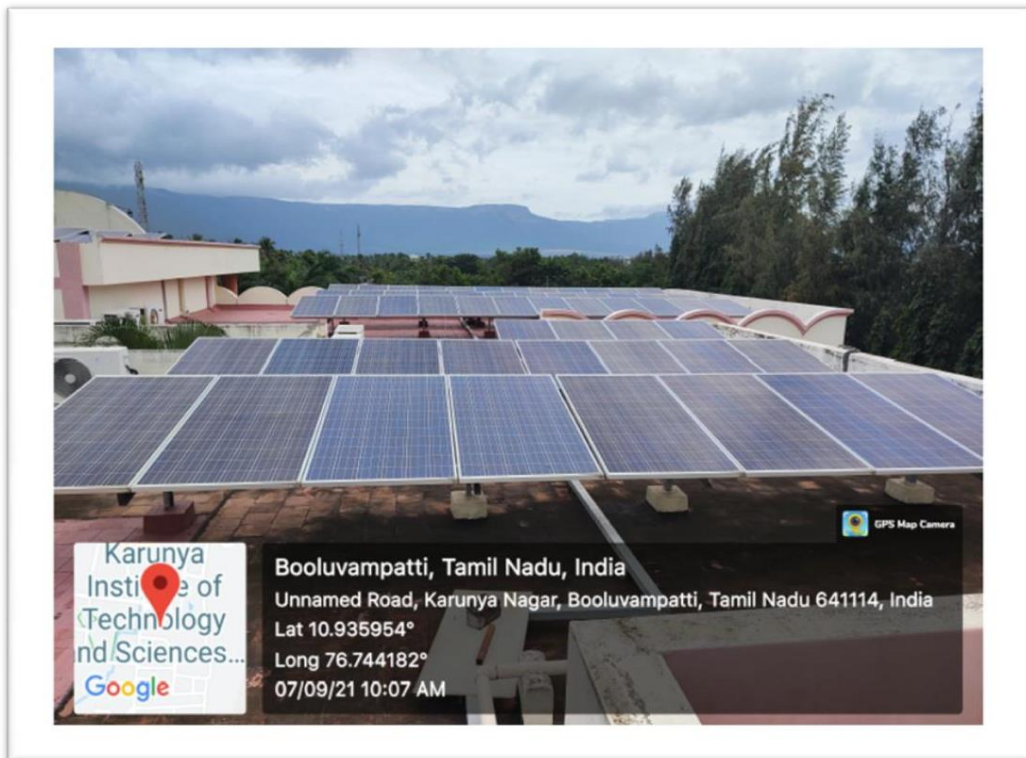


Fig 4. Solar roof top in the Main (Administrative Building)



Fig 5. Sensor based LED Lights

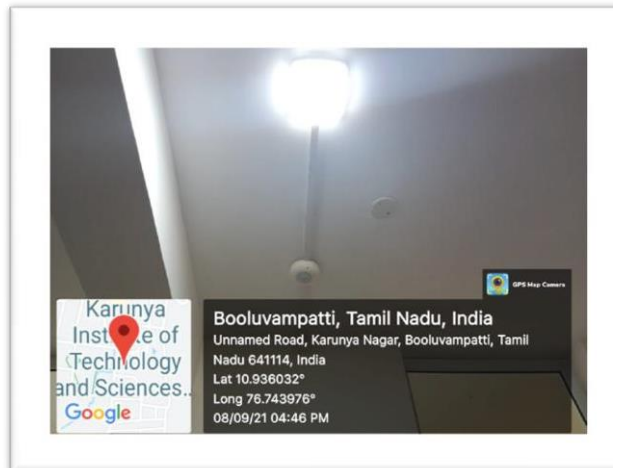
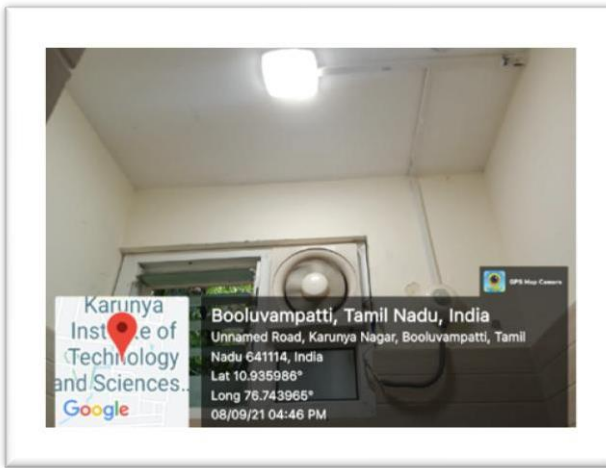


Fig 6. Sensor based LED Lights



Fig 7. V3f drive based energy efficient Lifts



Fig 8. V3f drive based energy efficient Lifts



Fig 9. LED Tube Lights in the Classrooms.