



University : Karunya Institute of Technology and Sciences
Country : India
Web Address : www.karunya.edu

[2] Energy and Climate Change (EC)

[2.1] Energy Efficient Appliances Usage

Sl.No	Energy Efficient Appliances	
1	Conversion of conventional Tubelights & Street lights to LED Tubelights & LED Street lights	97%
2	Star Rated Air conditioners	65%
3	Energy Efficient Computers	55%
3	Passenger & Goods Lifts	65%
4	Motors & Pumps controlled through wireless water level controller & Capacitors for Energy savings	95%
	Average in Total	75.4 %

SOLAR STREET LIGHTING IN KITS





SOLAR WATER HEATER IN KITS



Total lights Installed in KITS are 7 lights

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

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

<u>Details of Solar Water Heating System in KITS Campus</u>				
Sl.No	Description of Work	Location	Capacity in Litres per Day	Total installed capacity in LPD
1	Solar Water Heating system	Hostel Campus	87600	87,600
	Total capacity			87,600
	Total Kilo Calories			35,04,000
	Total Units Saved per Day			4,793
	Total units saved per Month			1,43,803
	Total units saved per Annum			15,81,833
	Power saving Cost per Annum (Rs)			1,00,44,640.00
Solar Water heating system of total capacity of 87,600 LPD is installed in our campus and Electricity power savings per Annum is Rs. 1 Crore				



LED Tube Light fittings

LED LIGHTS IN KITS



Sl. No	Description	Existing Light Fittings	Replaced LED Tube Light fittings
1	Power Consumption	40 Watts	18 Watts
2	No of Light Fittings	15066 Nos	15066 Nos
3	Units consumed per day	4,821 Units	2,169 Units
4	LUX (Intensity of Light)	95 Lx	150 Lx
5	Units consumed per year	15,66,825 Units	7,04,925 units
6	EB Charges/year	Rs. 1,48,84,837/-	Rs. 66,96,787/-
7	Maintenance Charges/Year	Rs. 45,000/-	Replacement warranty upto 3 Years
	Electricity Charges Savings/Annum		Rs.81,88,050/-



Sl.No	Month	Electricity consumption in kWh
1	Apr'2024	746085
2	May'2024	480703
3	Jun'2024	256510
4	Jul'2024	439643
5	Aug'2024	578334
6	Sep'2024	591350
7	Oct'2024	590424
8	Nov'2024	557192
9	Dec'2024	419402
10	Jan'2025	421066
11	Feb'2025	507400
12	Mar'2025	619150
Total		62,07,259

MOTORS & PUMPS CONTROLLED THROUGH WIRELESS WATER LEVEL CONTROLLER & CAPACITORS FOR ENERGY SAVINGS





STAR RATED AIR CONDITIONERS



PASSENGER & GOODS LIFTS



Green Computing

Server Virtualization - Server Consolidation

67 Virtual Servers

6 Physical machines

Desktop Virtualization - Virtual Desktop Infrastructure

67 Virtual Servers

9 Physical Servers

Green Computing - Energy efficient computers