



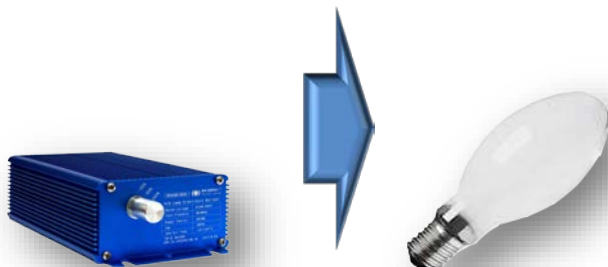
DEVTECH^{M2M}
Enabling Smart Cities

A CASE STUDY ON MINING INDUSTRY



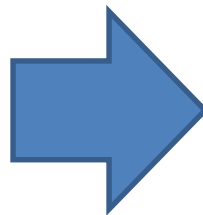
Devtech Megasaver (Electronic Ballast)

- No more passive inventor of PF Capacitor/ Igniter.
- Longer MTBF life > 50,000 hrs.
- 100% maintenance free.
- Remote mounting min- 15meters.
- Energy savings of 15-40 % minimum.
- Finally, upgradeable to tele management and with lighting SCADA offering energy saving potential up to 65%.



DEVTECH Mega Saver

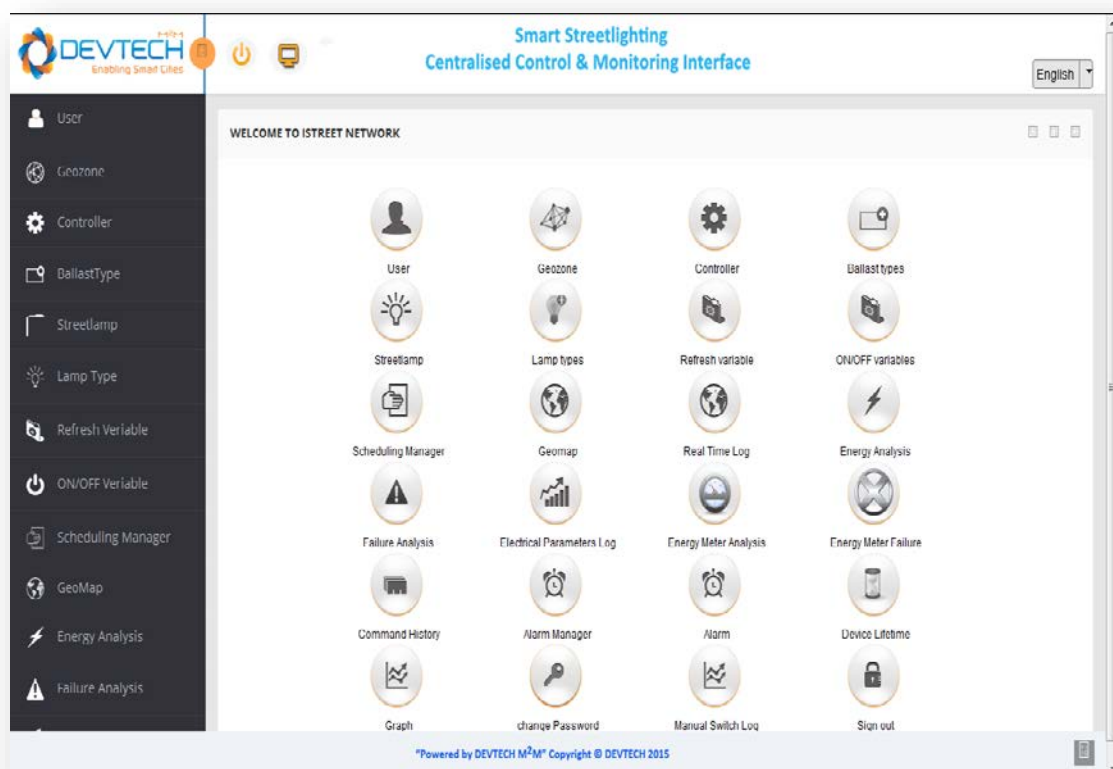
HID Lamp



**Magnetic Ballast, Igniter, Capacitor
Based conventional lighting fixture**

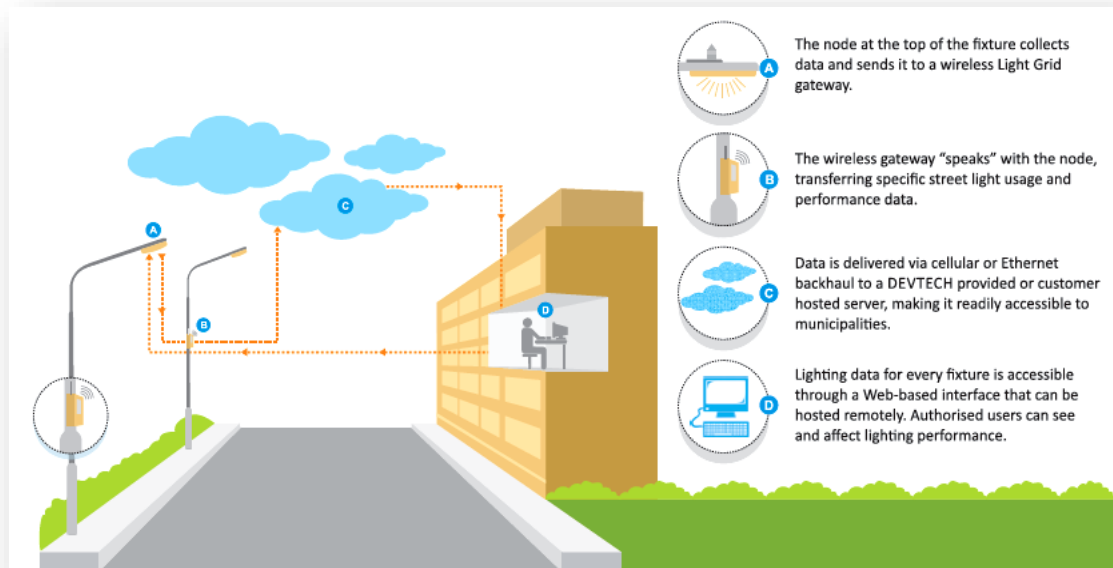
DEVTECH's Fugen based lighting fixture

iStreet.network



- The istreet.Network applications software based on the TALQ standards that will provide all the necessary, information monitoring, reporting and controlling of the city assets.
- The iStreet.network application allows you to plan and remain worry free with your application software suite which will enable multiple sensors and information points that a smart city infrastructure will add on as it grows.
- Smart City network has to be sustainable and take into account the ever growing and rapidly changing face of technology, while keeping in pace with the ever increasing user demands which in turn will be the Smart Cities demand.

System Architecture



- Devtech M2M is a remote street lighting control solution that offers you detailed, lamp-level management capabilities of every street light in your city and ensures that the right amount of light is provided where and when needed.
- Equally important, in-depth grid management gives an accurate real-time feedback of any change occurring along the grid, reduces both energy loss and energy surges and offers advanced maintenance optimization tools.
- Using the existing infrastructure, you can have real time detailed information over the grid and transform the existing distribution level network into an intelligent infrastructure of the future.

Description

- The energy consumption of existing conventional 250W HID magnetic system with 250W HPSV lamp is: 320W
- DEVTECH has installed the 150W DEVTECH Fugen with 150W MH lamp to achieve the same lighting levels.
- The total energy savings from DEVTECH Fugen system = direct energy savings + energy savings through by system replacement controlled scheduling of DEVTECH Fugen.
- By monitoring the DEVTECH front end software, it is clear that energy consumed by DEVTECH Fugen to deliver same lighting levels is 90W to 100W.
- So, total energy savings is = $320W - 100W$
= 220W (which is 68% against traditional magnetic system)

Observations

- A total energy saving of 68% is realized over conventional magnetic system.
- The system has delivered the expected lighting levels.
- The use of Metal Halide lamps is possible because of the constant power output feature over a range of 140V to 280V from Devtech Fugen.
- The maintenance of streetlights with Devtech Fugen is practically ZERO from the day of installation which is a huge saving on maintenance and no lamp replacement.
- The Devtech Fugen Installation proved that using electronic ballast lamp life can be maintained as per the manufacturer standards – no failures till date from the time of installation.
- The end customer / utility can control, schedule and detect any problems across these streetlights remotely from the control room through iStreet.network software.
- Further, the entire lighting database can be used for auditing; the CO2 emission database can be used for carbon credits too.
- No additional VOLTAGE STABILIZERS, HARMONIC FILTERS,
- POWER FACTOR CAPACITOR banks are required for Devtech Fugen Lighting load.

Energy Savings

Energy Savings	Existing	Proposed	Savings
Total number of Luminaries	25	25	
Lamp Wattage	250	150	100
Total Load per Luminaries in watts	295	162	133
Daily Power usage per Luminaries (kWh)	2.95	1.62	1.33
Daily Power usage for total no. of Luminaries (kWh)	73.63	40.5	33.13
Annual Power Usage for total number of Luminaries	26,873.1	14,782.5	12,091
Annual Energy Cost in INR	161,239	88,695	72,544
Total Savings in INR			72,544
Energy Saving in %			44.99%
Payback Period in Years			1.31