An ISO 9001:2000 certified company

Gloabtel Convergence Ltd.

CENTRALIZED
LIGHTING & MIX LOAD
ENERGY SAVING SYSTEM

Benefits :

Steady Lumen
Upto 30-40% energy saving
ROI within a year
Continuous energy saving for 12-15 years
80% IT depreciation
Luminary life enhancement
Luminary recurring cost down by half
Cost effective compared to localized accessories

Advantages :

Closed loop
Mag-Flux current controlled
No thyristor firing
Harmonics free
Contactor-less
12-15 years performance
Easy to install and commission
Reduces heat loss of lamps/chokes/cable
No lamp flickering
CE certified
An ISO 9001:2000 certified company

Features:

SCENE Mag-Flux technology
-Ve feedback
Current controlled
Coil based
Rugged construction
Extra switchgear capacity
Micro-controller based
7 time zones programming
User friendly diagnosis routines
Level setting as per process need
Phase independent redundancy
CRCA powder coated elegant panel

IT clause III8ixEC 2003-2004 onwards
80% IT Depreciation.

Industries Served

Acrylic	Cable	Detergent	Lamp	Plastic molding	Toothpaste
Automobile	Cement	Energy	Motor bike	Shoe	Tractor
Bags	Chemical	Fabric	Navy	Steel	Yeast
Battery	Chocolate	Furniture	Optical fiber	Street light	
Bearing	Cigarette	Hospital	Paper	Switchgear	
BPO (IT)	Computer	Hotel	Pharma	Textile	
Bulk drug	Corporation	Jute	Piston	Tiles	

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No thyristor - No harmonics - No contactor

Company Objective

In today's competitive business environment, lower cost, higher productivity and increased quality are not just goals for modern industry; these are requirements for survival. The pressure for a return on investment, earning growth and market leadership requires that today's operations, facilities and maintenance managers use every tool at their disposal to maximize that return and increase profitability. However, when evaluating the tools that are available, one of the most powerful is often overlooked or ignored... **the lighting.**

Of the Annual Costs per Square Foot for a typical industrial plant, lighting accounts for nearly 10%. However, this seemingly insignificant cost per square foot can dramatically affect your plant's productivity, product quality and overall costs of operation. Properly implemented industrial lighting is not simply an investment; it is a **competitive weapon.**
The Gloabtel Digital **SCENE** control Lighting Energy Saving System offers an architectural dimming option for lighting fixtures. **Gloabtel provides time zones, SCENE selection with the ease of front panel micro computer programming.**

Economy

It is impedance coil based system with open loop configuration. Its 3-4 tap system lets user set offline according to site requirement. It meets minimum requirement for energy saving. Energy Saving of 20-25% is achievable.

SCENE Mag-Flux

What is Mag-Flux - Magnetic amplifier is analogically equivalent to semiconductor transistor device where current is amplified & controlled (β= Ic/Ib). rather than voltage. Mag-Flux with its virtue of linear controllable impedance characteristic allows formation of -Ve feedback closed loop system which leads upto 40% energy saving. Voltage stabilizers control voltage and Mag-Flux controls current. As you know current control offers definite advantages over voltage control in terms of stability and performance. After indepth study of industries, power conditions and lighting characteristics Gloabtel developed and successfully commissioned several hundred systems, which provides steady light intensity through out different timings and periods under varying power conditions. Conventional systems like P-20, ES-25 or Electromizer do have reasonable success in energy saving but at the cost of much reduced and varying light intensity, absence of ignition facility as well varying load current. As per international norms QC, production, office, pathways, street-light are classified in context to lumen requirement. It happens that because of power conditions lumen varies drastically and even sometimes crosses specified level, either causing uncomfortable lux or excess power consumption. Gloabtel 's Steady Lumen **SCENE** Mag-Flux model rules out all these drawbacks and control the saturation current with dynamic energy saving [record saving 33% Mahindra]. Under such conditions conventional system behave fairly well, but Steady Lumen gives you ultimate performance. Never before user friendly 'ignition control' soft power start is applied to ignite the gas discharge lamps. With optimized setting for **SCENE** Control one can benefit upto 30 - 40 % energy saving.
Principle - Technically Mag-Flux is described as essentially a device which controls the AC impedance of coil by controlling the effective permeability of magnetic material on which the coil is wound.- George Trinkaus [U.S. Navy]
Technical Features - ✦ Operating range: 180-280 V~ 1 ph (312-485 VAC 3 Ph) ✦ Efficiency: >99.5% ✦ Level control: ±1% ✦ Loop: -Ve feedback ✦ Resolution: ±0.5% ✦ Reliability: Highest compared to conventional systems ✦ Isolation: I/p-O/p 2.5 kV ✦ Core: Near amorphous ✦ P.F.: No effect

Illustrative list of clients

Reliance Industries Ltd.
Reliance Energy
VDL (HLL)
Siemens
Mahindra & Mahindra Ltd.
Cadbury (I) Ltd.
Philips (I) Ltd.
Colgate Palmolive (I) Ltd.
VIP Industries Ltd.
Blowplast
Deepak Nitrite Ltd.
Hotel Radisson
RPG Cables Ltd.
Nicholas Piramal Ltd
H & R Johnson
Exide Industries Ltd
Hero Honda Ltd.
Sterlite
Cipla Ltd
NRB Bearings Ltd.
Saf Yeast Company Ltd
Three M Paper Products Ltd
Pasupati Acrylon
R M Mohite textile
Asian Paints (I) Ltd.
Ludlow jute mill
Sumangal hotel
Brihan-Mumbai Municipal crpn.
Ambuja Cement
Reliance jute mill
Kamarratty company
ITC
Narmada Extrusion
Vizag Steel
LG
Menon Piston
Sterling & Wilson Ltd.

Augmented Mag-Flux

- Modified Mag-Flux outputs **PURE SINE WAVE** and have RMS control principle
- Scene control as per time zones
- Redundancy due to coil based operation
- Lamp flickering is avoided
- **No harmonics** generated
- Ignition facility for initial startup
- Lamp life gets extended by almost twice
- Upto 40 % energy saving is achievable
- Mag-Flux is **COIL based** device and is fail safe

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	Economy	SCENE Mag-Flux
Lumen	Variable	Steady
Type	Coil based	Coil flux based
Thyristor based	No	No
Control	Step	Linear
SCENE control	No	Yes
User settability	No	Yes
Online setting	No	Yes
Reliability	Good	Good
Ignition control	No	Yes
Out put	-4-7-10 % of Input	Dynamic control
Technology	Voltage based	Current based (voltage feedback)
Contactors used	Yes (as required)	No
Feedback	No	Yes
Method	Conventional	Advanced-world renowned
Power Electronic components	No	No
Capacity	10 - 840 KVA 3 Ph	10 - 450 KVA 3 Ph
Performance	Maintenance free	Maintenance free
Motor control	No	Yes
Description	Economy	Mag-Amp
Lighting Maintenance	Reduced	Further reduced
Cable/lug heating	Reduced	Reduced
Saving	Upto 20 - 25 %	Upto 30 - 40 %
Bucking	Constant % wise	Dynamic
Boosting	No	No
Operating Range	225 - 260 VAC	180 - 280 VAC for dynamic control
Price	Economical	Affordable
Design safety (for coil)	10 %	10 %
Design safety (for s/w gears)	≃ 20 %	≃ 40 %
Cabling	Copper	Copper
Protection	HRC fuses / MCCB	HRC fuses / MCCB
Bypass	Yes	Yes
Cooling	Natural	Natural
Life	10-15 years	12 - 15 years
Guarantee	1 year	1 year

I.P. - 65

IP-55

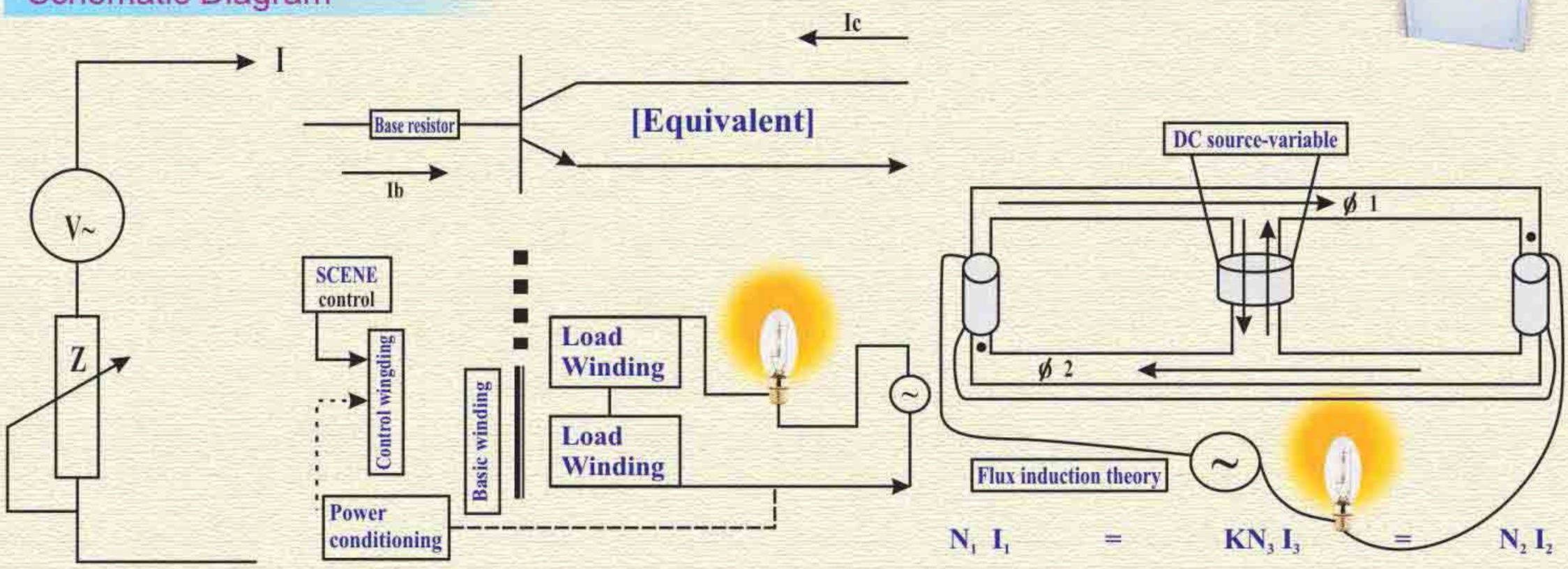
Lamp Characteristics

It is studied by Gloabtel, that when power to luminary is varied its luminosity changes as per manufacturer's specifications. Typical lamp specs are as follows,

Philips HPMV	220 - 250 VAC	CEMA HPMV	220 - 250 VAC
HPSV	200 - 250 VAC	ML	210 - 240 VAC
Tube light	190 - 250 VAC (not mentioned)		
Choke	220 - 240 VAC taps		

It is evident that lamp manufacturer propose lower power usage for increased lamp life at optimum lumen level.

Schematic Diagram



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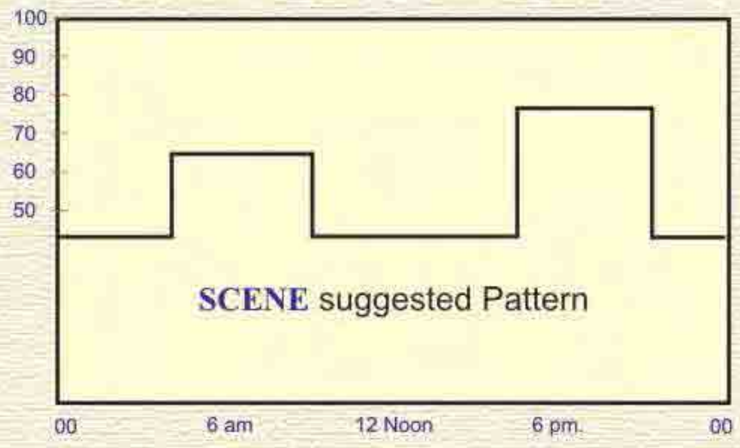
SAVING CALCULATION (ROI)



Following parameters are taken into consideration :-

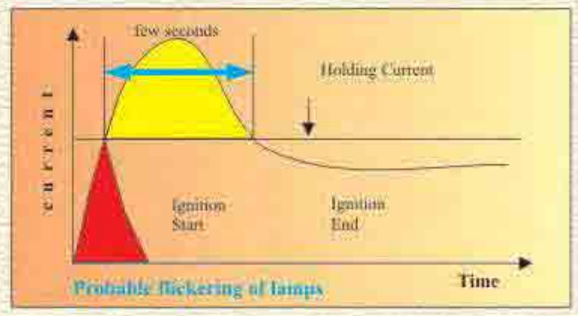
Existing energy consumption	100 kW
Power tariff	Rs 4
Usage per day	24 hrs
Usage per month	30 days
Energy saving	30 %
Yearly billing	35 lacs

$$\textbf{ROI} = \frac{\text{Price (Rs)} * 100}{\text{Saving (\%)} * \text{ON hrs per day} * \text{ON days per month} * \text{Tariff (Rs)} * \text{kW}}$$

= 3 months

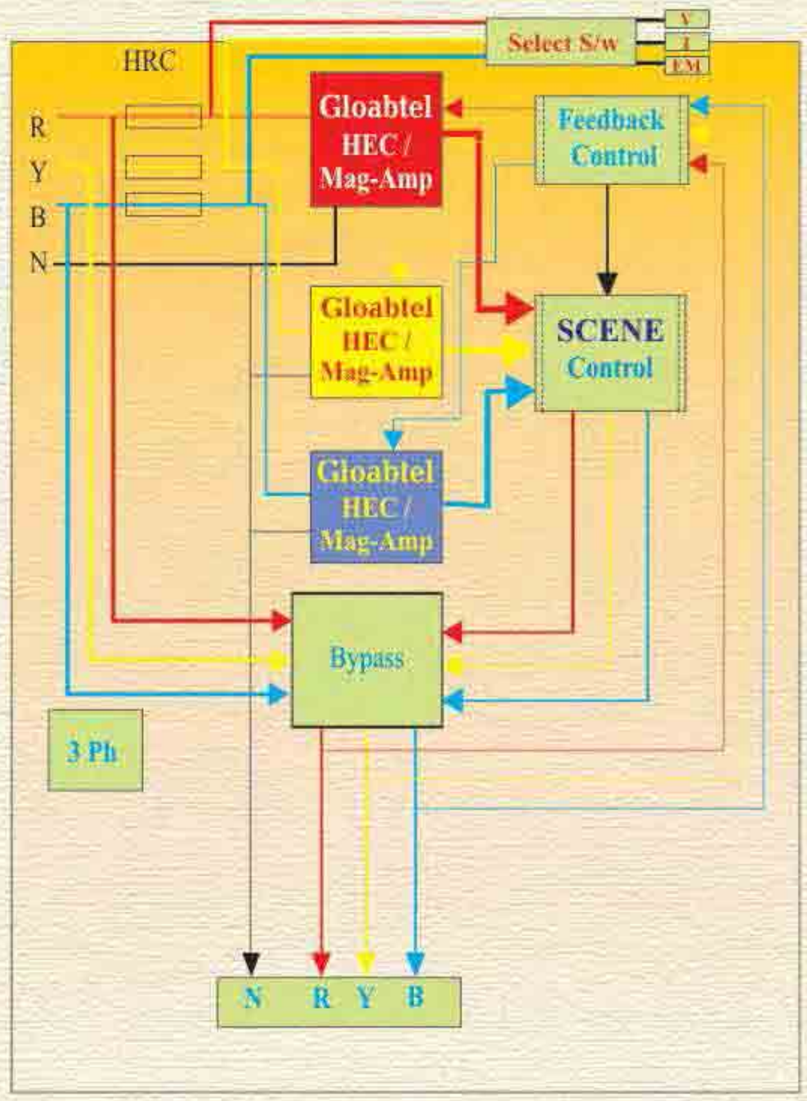
Amount saved per year~ Rs 10 lacs

Ignition control



Gas discharge lamps need higher excitation power for switching ON and later normal operating current can be optimized to much lower side. Conventional systems take into consideration only normal current and there by failing to ignite the lamps in most of the cases. Field study made by **Gloabtel** has led us in designing Ignition Control to break up the technical barrier.

Schematic diagram



STANDARD

1) CRCA 16 Swg. P. C.
2) Volt Meter
3) HRC Fuses
4) Mag-Flux **SCENE** Card
5) Feed Back Control Card
6) Internal Cu Cabling
7) Bypass S/w
8) HEC / Mag-Flux Coils
9) Terminal Stripe & Gland Plate
10) Instruction Manual
11) Bottom Cable Entry
12) IP 45/55 enclosure

HEC :

High Efficiency Coil Mag-Flux : Magnetic Amplifier Feedback control and **SCENE** control are applicable for **SCENE** model only Accessories shown above are not part of standard system

OPTIONAL :

1) Almanac Timer
2) MCCB / MCB
3) Energy Meter
4) Contactor
5) Current Meter
6) R, Y, B LED Indication
7) S.F.U.
8) IP 65 Enclosure
9) Output TPN distribution
10) V-A-F digital meter

Regards,
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