

# coolite™ - 3kVA to 120 kVA

## Lighting Energy Saver

Saves 10% to 20% in direct lighting energy consumption, runs lamps cooler. Looks like a computer CPU, connected to the in-comer of a lighting supply line for large-area lighting.



**Power & Energy Monitor**  
Factory fitted option to spot check savings

**Savings selector**  
Select saving to suit load  
**20%** For Tech parks with OLTC / UPS Stabilized supply / Hi-efficient Lamps  
**15%** For general use in Malls, Offices, Multiplexes, Auditoriums with stabilized supply, mixed Old / New basic lamps  
**10%** For lamps older than 5 yrs, supply varies occasionally between 220V - 240V  
**0%** Supply <220V No Saving

**Load status Monitor**  
Electronic Monitor with relay O/P for Hi & Low Voltage

**Circuit breaker**  
For short circuit & Overload Protection

### Applications

- Suitable for stabilized lighting circuits in:
- Commercial buildings and complexes
  - Service industry - Hotels, Hospitals, Cinema halls, BPOs
  - Public utilities - Auditoriums, Stadiums (indoor/ outdoor), Educational Institutions
  - Residential buildings and apartments
  - Campus lighting in large industrial and commercial establishments
  - All industrial facilities

### Models

	kVA	Overall Dimensions W x H x D mm		Floor/Trench Mounting Dimensions W x D mm	Weight kg approx	
		Indoor	Outdoor		Indoor	Outdoor
1 Ph	3				42	45
	6	275 x 600 x 255	275 x 650 x 300	215 x 194	52	55
	9				62	65
1 Ph	14				65	70
	23	400 x 850 x 300	400 x 920 x 350	240 x 245	70	75
	33				75	80
3 Ph	9				55	62
	18	275 x 600 x 485	275 x 650 x 530	215 x 410	62	70
	27				62	70
3 Ph	42				90	100
	60				100	110
	70				105	115
	90	400 x 850 x 580	400 x 920 x 630	340 x 510	110	120
	99				150	160
	120				150	160

### Benefits

- High energy savings on lighting loads - 10% to 20% direct savings, cooler lamp operation especially with all types of discharge lamps
- Filters harmonics injected to the line by electronic lighting ballasts and reduces spikes in lighting circuits
- Improves PF

### Savings Example - Shopping Mall

Scenario:

- Average running load = 60kVA of Florescents & Metal halide lamps
- Investment for one no of 70kVA coolite™ = Rs 1,50,000 (Inclusive of taxes and interest 12 % per annum)
- Duration of load per day = 18 Hours
- Number of working days per year = 300
- Cost per unit = Rs 4.50
- Energy savings on lighting = 15 %

### Direct Savings & Payback calculation:

Power	Lighting kW	Aircon kW *	Total kW
Without coolite™	60	24	84
With coolite™	51	20	71

Saving	Without Aircon	With Aircon **
Units /day	(60 - 51) x 18 = 162	(84 - 71) x 18 = 234
Units /Annum	162 x 300 = 48,600	234 x 300 = 70,200
Annual saving	48,600 x 4.5 = 2,18,700	70,200 x 4.5 = 3,15,900
Payback period = investment / saving per annum	1,50,000 / 2,18,700 = 0.68 years = 9 months	1,50,000 / 3,15,900 = 0.48 years = 6 months

\* Power required by Airconditioner to take care of heat generated by 60 kW lighting load

\*\* When lighting load is operating in air conditioned spaces

### Indirect Savings

- Enhanced lamp life and reduced maintenance cost - coolite™ reduces blackening of fluorescent lamps and colour shifting to orange in Metal halide lamps
- Reduced aircon costs - cooler lamp operation
- Reduction in maximum demand - reduced energy consumption
- Tax benefits for energy saving investments and 80% depreciation in the first year in India as per Section 32 of the Income Tax Act 1961

Check out your savings on the coolite™ Savings Calculator on [www.conzerv.com](http://www.conzerv.com)



ISO 14001:2004 Certified  
ISO 9001:2000 Certified

## Features

### Improved performance of lighting systems

- Spot check savings with Power & Energy Monitor-factory fitted option
- LED Load Status Monitors with relay output options for low & high voltage. No fused indicator bulbs to replace
- User selectable settings to suit site conditions - % Energy savings - 0%, approx 10%, 15% & 20%
- Short circuit and overload protection to lighting circuits, which often get overloaded as facilities expand

### Simple to install and use

- Compact size like a computer CPU, rugged construction, no moving parts
- Easy installation

### What coolLite™ Cannot Do

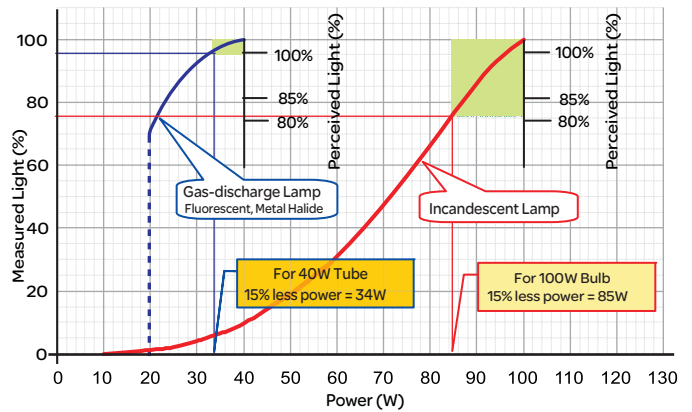
- Not a Stabilizer - use coolLite+™, launch 2007
  - Requires 240V (220 to 260V) input maintained thru OLTC/Stabilizer/UPS
  - Stabilizer function in coolLite+™
  - Not suitable for Municipal Street Lights - erratic supply
- Not a Dimmer - use coolLite+™
  - coolLite™ is meant to be used for energy saving without noticeable drop in lumen
  - Saving merely through dimming is not an objective of coolLite™
- Not compatible with other loads
  - Occasional Window AC may not create a problem But should not have UPS, PCs, etc. since voltage vectors are modified

## Technical Specifications

Supply type	1 phase (2 wire) / 3 phase (4 wire)
Recommended Voltage*	240 (220 to 260) VLN, 1ph 415 (380 to 450) VLL, 3 ph
Mode of operation	Continuous
Ambient Temperature	-5 to +60°C Operating -25 to +70°C Storage
Usage	Indoor (outdoor - optional)
Standards	IS 13947 / IEC 60947 (for major components used)
Insulation	2.5 kV Line to Earth
Protections	Short circuit and Overload protection through MCB / MCCB
Power & Energy Monitoring option	EM 6400 or ELF 3234-3 or EM 6436 factory fitted meter
Phase Indication	LED Load Status Monitor blink on over / under voltage
Cable terminations	Bottom entry gland plate, heavy duty terminals, brass earthing
Mounting	Floor / Trench (Wall or Caster mounting optional)
Warranty	One year from date of invoice Refer user manual for conditions applicable

\*Higher and steady voltages ensure good savings and steady lighting soothing to the human eye

## How do we do this?



- The Lumen curves saturates
- 15% Power Reduction gives only 5% Lumen reduction for Discharge Lamps
  - Eye cannot perceive < 50 Lux change in 250 Lux

Fluorescent lamps do not have a linear Lumens-Watts curve. I.e, the increased power will not give you a proportional increase in light output (lumens). See graph above. Conversely, slightly reducing the power supplied does not reduce the light output proportionally. This is the basic principle the coolLite™ utilizes.

Thus, a 15% reduction in wattage supplied to a typical 4-foot tube light would result in a measured lumens reduction of approx 5% and a perceived reduction in brightness of just 2% because the pupil of the human eye enlarges to allow more light into eye, making the light appear brighter.

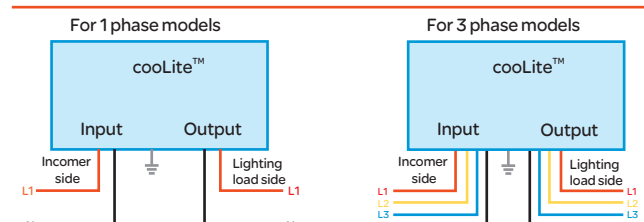
The coolLite™ is introduced into start of the lighting line. It uses a network of impedances (inductors and capacitors along with an electronic control board, which don't draw Watts) to improve the matching of lamp impedance to the line. This optimizes power supply to the lamps thereby saving energy without noticeable drop in lumens.

A car transmission is an example of fuel saving via impedance matching between the engine and drive wheels. Another example of impedance matching, is a cross-over network which optimizes power transfer from the amplifier to HiFi speakers – without it the speakers may overload and burn out.

Naturally, the coolLite™ is tuned to the Lumen-Watt curve of modern commercial lighting systems, typically using energy-efficient fluorescent, gas-discharge and metal halide lamps. Older technologies such as Incandescents and halogens, while still being compatible and operable via the coolLite™, have a more linear lumens characteristic, resulting in a greater drop in lumens than their fluorescent counterparts.

The lighting loads need to be on a dedicated supply line, as is the practice in large facilities. The occasional air conditioner on the line may not present a problem and has been observed to yield a 10% energy saving. However, computer CPUs, UPS and other loads should not be connected to the same lighting supply line.

## Wiring Diagrams



For detailed installation instruction refer coolLite™ User Hand Book.



## 4. Model Selection Table

Specify your coolLite™ requirements

	Product	Phase	kVA	Online power & energy monitor	Usage	Mounting	
Specifications	<input type="checkbox"/> CL coolLite™	<input type="checkbox"/> 11Ph	<input type="checkbox"/> 03	<input type="checkbox"/> K ELF 3234-3 <input type="checkbox"/> L EM 6400 <input type="checkbox"/> M EM 6436 <input type="checkbox"/> N No meter	<input type="checkbox"/> I Indoor	<input type="checkbox"/> C Caster	
			<input type="checkbox"/> 06			<input type="checkbox"/> C Caster	
			<input type="checkbox"/> 09			<input type="checkbox"/> W Wall	
			<input type="checkbox"/> 14			<input type="checkbox"/> F Floor	
			<input type="checkbox"/> 23			<input type="checkbox"/> C Caster	
			<input type="checkbox"/> 33			<input type="checkbox"/> F Floor	
	<input type="checkbox"/> CL coolLite™	<input type="checkbox"/> 33Ph	<input type="checkbox"/> 09	<input type="checkbox"/> K ELF 3234-3 <input type="checkbox"/> L EM 6400 <input type="checkbox"/> M EM 6436 <input type="checkbox"/> N No meter	<input type="checkbox"/> I Indoor	<input type="checkbox"/> C Caster	
			<input type="checkbox"/> 18			<input type="checkbox"/> C Caster	
			<input type="checkbox"/> 27			<input type="checkbox"/> F Floor	
			<input type="checkbox"/> 42				
			<input type="checkbox"/> 60				
			<input type="checkbox"/> 70				
			<input type="checkbox"/> 90				
			<input type="checkbox"/> 99				
			<input type="checkbox"/> 120				
Ex:	CL coolLite™	1 1Ph	09 09 kVA	L EM 6400	I Indoor	F Floor	
Sl. No.							Qty.
Model	1	CL			I		
	2	CL			I		
	3	CL			I		
	4	CL			I		

- For breakdown isolation, please order an External Change Over Switch separately.
- Please send completed order form to [contact@conzerv.com](mailto:contact@conzerv.com) or nearest Schneider office or our sales engineer.
- On receipt of your order form, our sales engineer will visit your site and conduct a site survey to determine the coolLite™ model that best fits your application.
- Based on the survey and your confirmed order, you will receive the factory order acknowledgment confirming the delivery date, Delivery is typically 4 weeks for <120KVA & 6 weeks for ≥ 120KVA from receipt of your confirmed order.

Note:

- ELF 3234-3 CI 1.0 meter: measures instantaneous parameters (W, VA, VAR, PF) and energy parameters (Wh, VAh, VARh).
- EM 6400 CI 1.0 meter with RS 485 port: measures instantaneous parameters (V, A, W, VA, VAR, PF, F) and energy parameters (Wh, VAh, VARh).
- EM 6436 CI 1.0 meter without port measures instantaneous parameters (V, A, W & PF) and energy parameter Wh.

User Agreement: This product is licensed for the specified use of lighting energy savings only. This unique design is the sole property of Schneider Conzerv and is fully protected. Any violations or attempts at reverse engineering or copying will be taken very seriously and necessary legal proceedings will be initiated after due enquiry into the matter.

Schneider Conzerv Representative

Name:  
Signature:  
Date:

Customer Representative

Name:  
Signature:  
Date:

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