



LED Lighting Solutions

Innovative. Efficient. Reliable.

About Honeywell Environmental and Combustion Controls, India

Environmental and Combustion Controls (ECC), India, is part of Honeywell's global Automation and Control Solutions business. ECC is a \$2.4 billion global business with installations in more than 150 million homes, 10 million buildings and a multitude of manufacturing plants around the world. ECC offers integrated product solutions for various residential, commercial and industrial applications ranging from HVAC Solutions, Water Controls, Wiring Devices and Cable Management, Circuit Protection Devices, LED and Lighting Controls, Building Control Solutions and Industrial Combustion Controls. As part of its global operations, all ECC brands share the same commitment towards innovation, quality, safety and customer service. Brands that operate under ECC in India are MK, Trend, Alerton, Webs-AX™, Phoenix Controls and Maxon. ECC has over 9 sales offices across the country, two state-of-the-art manufacturing units in Chennai and Dehradun, and an extensive pan-India distribution network. With its 'Customer First' approach, ECC is committed to making life easy and convenient, safer and more secure, more comfortable and energy efficient, with its smart products and solutions.

With more than **50%** of our products linked to energy efficiency, Honeywell can help the world face its energy challenges. If Honeywell's existing technologies were widely adopted today, energy demand globally could be reduced by **20-25%**



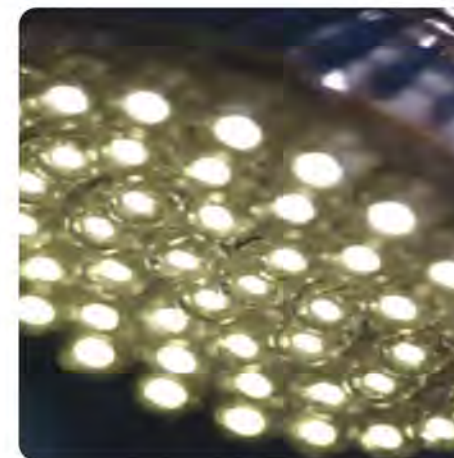
Honeywell's LED Heritage

Honeywell has a heritage of enabling LED technology and has been instrumental in bringing LED technology to the market in a number of applications.

Without Honeywell's 45 years of experience in advanced electronic materials for the semiconductor industry, the superior materials required for key components of LED manufacturing would not have occurred. By refining the manufacturing process to enable better thermal management and electrical interconnect technology, Honeywell is able to bring the quality and beneficial experience normally associated with the military and aerospace sectors, to a wider commercial market.



Honeywell LED technology is used in many of the world's aircraft due to its reliability and performance in extreme conditions.



Honeywell provides a wide range of material solutions for the manufacturing of today's LED's.

Innovative

The unique design of Honeywell Luminaires and LED Tubes allow for a 30 degree directional allocation of light, providing greater coverage where it is needed. Additionally, the installation of award-winning Managed Lighting Systems and Sensors from Ex-Or or MK Electric can further increase energy savings up to 30%, with additional control, daylight harvesting and presence detection. The Honeywell LED team can conduct a site survey and identify the best product solutions to offer you the most energy savings.

Efficient

LED lighting technology from Honeywell can offer a 50% energy saving, when compared with traditional lighting. With lighting representing an average of 21% of a building's total energy consumption, and with the continuing drive to reduce energy consumption in all types of buildings and facilities, choosing Honeywell LED Lighting can make a substantial contribution towards energy reduction targets. Along with the environmental benefits, a positive financial impact can also be realised through the dramatic savings on energy bills.

Reliable

Honeywell's driver design enables long lamp life of upto 60k hours. Our market leading warranty gives confidence that the right choice is made with LED solutions by Honeywell. The lumens depreciation of the Honeywell LED Lighting products will not exceed 30% within a five year period. Upon completion of the installation the Honeywell team can visit the site and undertake a survey. This will form the performance benchmark which is then applied to the warranty period. (Full details upon request).



Product Range

Lunar LED Eco Lite

Installation: Recessed



Product Code	Input Power	Replacement of
HLI-EDL15W3K	15W	2x18WCFL
HLI-EDL15W4K	15W	2x18WCFL
HLI-EDL15W6K	15W	2x18WCFL

- Opal diffuser for Uniform light
- Spring loaded clips for easy mounting



Shopping Malls | Offices | Hotels | Showrooms | Class Rooms | Auditoriums | Corridors | Staircases

Lunar LED Down Light

Installation: Recessed



Product Code	Input Power	Replacement of
HLI-DL18W3K	18W	2 x 18W CFL
HLI-DL18W4K	18W	2 x 18W CFL
HLI-DL18W6K	18W	2 x 18W CFL

- Prismatic diffuser for Uniform light
- Spring loaded clips for easy mounting



Class Rooms | Hotels | Offices | Showrooms | Shopping Malls | Auditoriums | Corridors | Staircase

Spot-on Down Light

Installation: Recessed



Product Code	Input Power	Replacement of
HLI-SPOT9W3K	9W	50W Halogen

- Spot light
- Adjustable beam direction



Hotels | Restaurants | Showrooms | Residences | Entrance Halls | Reception

Super-Grid LED

Installation: Surface



Product Code	Input Power	Replacement of
HLI-2 x 2 SPL 45W4K	45W	4 x 20W FTL
HLI-2 x 2 SPL 45W6K	45W	4 x 20W FTL
HLI-4 x 1 SPL 45W4K	45W	4 x 20W FTL

- Uniform Light distribution
- Dimming option available



Offices | Banks | Hospitals | Showrooms | Retail Outlets | Hotels | Restaurants

Grid-Line

Installation: Surface and Recessed



Product Code	Input Power	Replacement of
HLI-2 x 2 L40W3K	40W	4 x 18W FTL
HLI-2 x 2 L40W4K	40W	4 x 18W FTL
HLI-2 x 2 L40W6K	40W	4 x 18W FTL

- Uniform Light distribution
- Dimming option available



Offices | Banks | Hotels | Hospitals | Class Rooms | Showrooms

Grid-Line

Installation: Surface and Recessed



Product Code	Input Power	Replacement of
HLI-4 x 1 L40W3K	40W	2 x 28W FTL
HLI-4 x 2 L40W4K	40W	2 x 28W FTL

- Uniform Light distribution
- Dimming option available



Retail Outlets | Offices | Banks | Hospitals | Class Rooms | Auditoriums | Showrooms

Product Range

Engine LED High Bay

Installation: Suspended



Product Code	Input Power	Replacement of
HLHB95W5000K	95W	150W MH, HPSV
HLHB110W5000K	110W	250W MH, HPSV
HLHB190W5000K	190W	400W MH, HPSV

- Chip on Board technology
- Unique and patented lens for even light emission



Warehouse | Factory | Hall | Parking Lot | Public Park

Pendent High Bay LED Light

Installation: Truss



Product Code	Input Power	Replacement of
HLI-PHB120W3K	120W	250W MH, HPSV
HLI-PHB120W4K	120W	250W MH, HPSV
HLI-PHB120W6K	120W	250W MH, HPSV

- Multi chip technology
- Extruded housing



Parking Lot | Factory | Warehouse | Hall | Public Park

Pendent Mid Bay LED Light

Installation: Suspended



Product Code	Input Power	Replacement of
HLI-PMB50W3K	50W	150W MH

- Multi chip technology
- Prismatic diffuser



Shopping Malls | Hotels | Hospitals | Airports

Astro LED Flood light

Installation: Surface



Product Code	Input Power	Replacement of
HLI-AFL100W3K	100W	250W MH

- Integral junction box
- Ingress protection 65



Power-Lux LED E-Tube

Installation: Battenfit



Product Code	Input Power	Replacement of
HL-TU10W06-745B06AFI	10W	36/40W T8/T12 FTL
HL-TU10W06-764B06AFI	10W	36/40W T8/T12 FTL
HL-TU18W12-745B06AFI	18W	36/40W T8/T12 FTL
HL-TU18W12-764B06AFI	18W	36/40W T8/T12 FTL

- Built-in driver structure
- High lumen output



Offices | Indoor Lighting | Parking Lot | Hypermarket | Shopping Malls & other Commercial Areas

The Benefits of Rotating Tubes

Honeywell Luminaires and LED Tubes allow for the +/- 30 degree directional allocation of light providing greater coverage.

* Subject to environmental conditions. Terms and conditions apply. Honeywell LED Specialist can advise further.



General Specifications:

Input Voltage	:	100-240V/50hz
Colour Rendering Index (%)	:	70-80
Operating Temperature	:	-20° C To 50° C
Colour	:	Warm White, Neutral White, Cool White
Power Factor	:	>0.9

Honeywell's Energy Saving Solutions

Honeywell recognise that LED lighting can be only one part of an energy management strategy. Honeywell offers additional products and services that complement LED Lighting. Even before any product is evaluated Honeywell can offer advice on the feasibility of implementing LED lighting, as well as giving advice on how to get the best from the solution. The additional investments made by the Honeywell business in skilled people, internal resources and services, and the benefits of a global business with the highest standards of quality and reliability, means the customer will receive exemplary service from start to finish.

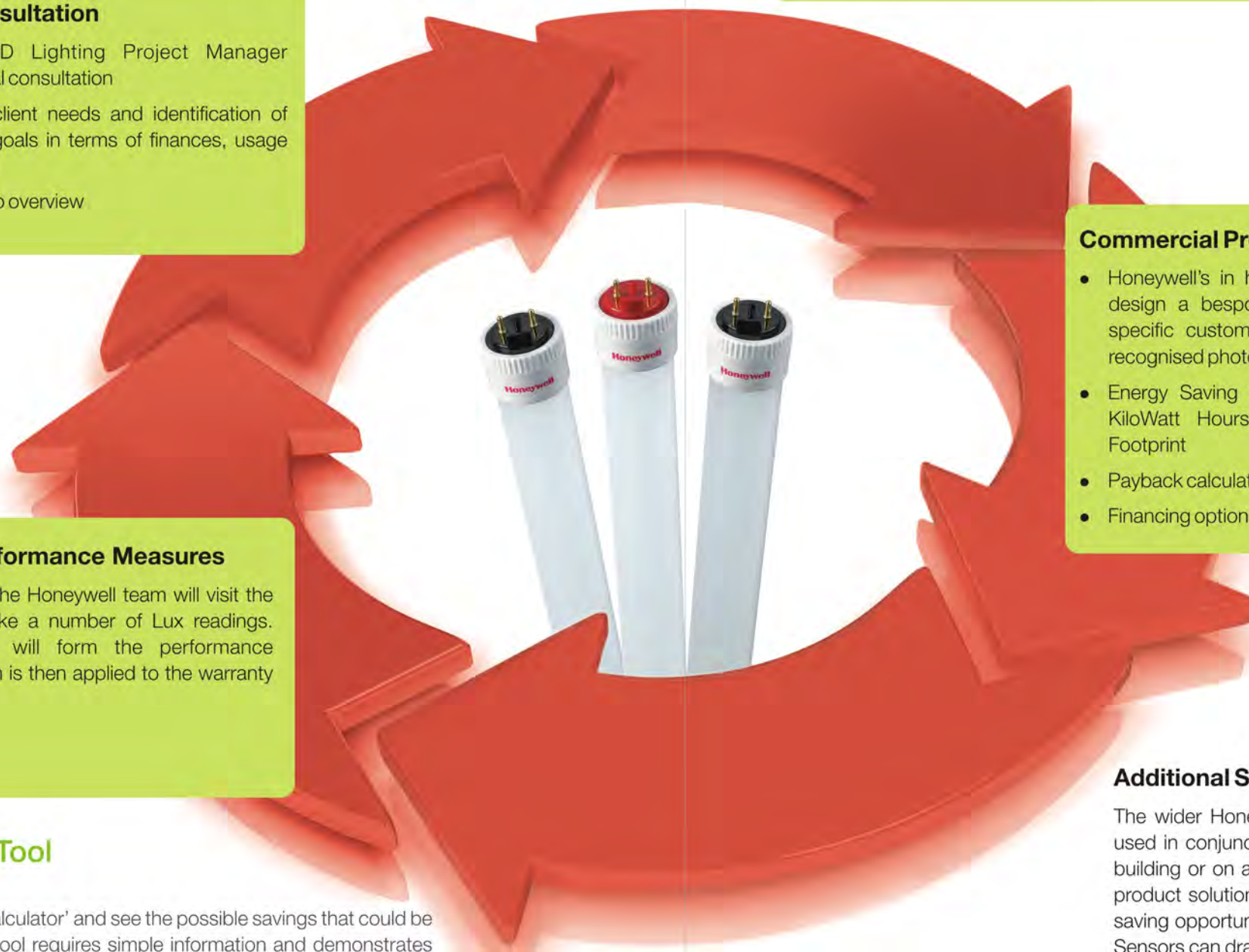


Customer Consultation

- Honeywell LED Lighting Project Manager undertakes initial consultation
- Discussion of client needs and identification of energy saving goals in terms of finances, usage and efficiencies
- Product portfolio overview

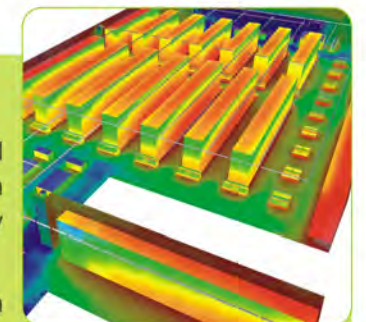
Site Survey

- Review current installations
- Perform an energy assessment and identify opportunities for improvement
- Business case construction



Commercial Proposition

- Honeywell's in house Lighting Design team will design a bespoke lighting scheme, based on specific customer requirements, using industry recognised photometric simulation software
- Energy Saving calculations will be provided in KiloWatt Hours, Energy Spend and Carbon Footprint
- Payback calculations will be provided
- Financing options for projects discussed and evaluated



Post Install Performance Measures

- After installation the Honeywell team will visit the site and undertake a number of Lux readings. These readings will form the performance benchmark which is then applied to the warranty period

Honeywell Energy Calculation Tool

Visit led.honeywell.com to try the 'energy saving calculator' and see the possible savings that could be made with Honeywell LED solutions. The online tool requires simple information and demonstrates some of the savings to be made. Honeywell LED lighting specialists can perform a no commitment detailed review, using an enhanced version of the tool that provides full insight into the energy saving modeling and investment process. Please speak to Honeywell for more details, or visit led.honeywell.com.

Additional Services

The wider Honeywell portfolio can offer enhanced saving opportunities when used in conjunction with the Honeywell LED Lighting range, or elsewhere in a building or on a site. The Honeywell LED team will be able to identify the best product solutions due to their in-depth knowledge of the portfolio, and energy saving opportunities and methods. The use of a Managed Lighting System and Sensors can dramatically impact energy savings by adding additional control and avoiding waste in less frequently used locations.

Honeywell Global



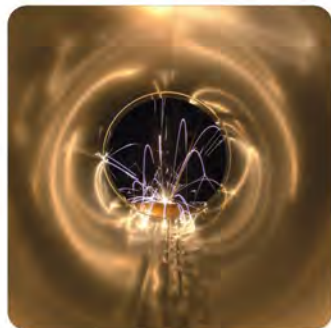
Aerospace

Our aerospace products and services are used globally on virtually every commercial and business aircraft operating today as well as for defence and space applications. We listen carefully to our customers and focus on technologies that meet their needs to make flying safer, more reliable, more efficient, and more cost effective.



Automation and Control Solutions

Our environmental controls, life safety, security, sensing, scanning, and mobility products, as well as building and process solutions are at work in 120 million homes, 10 million buildings, 5,000 industrial facilities, and hundreds of public and private utilities worldwide. Our sensing and control expertise - the ability to capture more and better data for improved productivity, safety and security, better decision-making, and reduced costs - is what unifies the common platforms for our Automation and Control Solutions business.



Performance Materials and Technologies

A global leader in developing and manufacturing high-purity, high-quality performance chemicals and materials, our technologies reduce emissions, stop bullets, enable the production of green diesel and green gasoline, increase oil refinery capacity, speed drug discovery and protect medicines.



Transportation Systems

Transportation Systems is a leading provider of world-class technologies and solutions to automakers, their suppliers, and consumers. From fuel-saving and emission-reducing turbo chargers to brake products such as disc brake pads, drum brake linings and aftermarket brake products marketed under the Bendix® and Jurid™ brand names, Transportation Systems' technologies enhance the efficiency and performance of passenger and commercial vehicles worldwide.

We are building a world that's safer and more secure...
 more comfortable and energy efficient...
 more innovative and productive.

We are **Honeywell.**





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