

Will electronic HID ballasts take their fair share?

Are electronic HID ballasts poised for growth—similar to the way electronic fluorescent ballasts were 15 years ago?

Electronic HID ballasts combine the ballast, capacitor, ignitor, and mounting brackets into a single unit—and just five years ago, the market share for them was negligible, according to John Brelus, general manager of ballast products for GE Consumer & Industrial. Today, he noted, they make up about 10% of total HID ballast shipments from 20W to 400W—a share he believes will double in the next five years.

“Right now, two realities are driving innovation in the lighting electronics field—legislation aimed at reducing energy use, and end-users and utilities looking for ways to cut wasteful spending on energy,” said Brelus. “These trends are the catalyst for electronic HID ballast growth. HID is where linear fluorescent was 15 to 20 years ago.”

Interest in electronic HID ballasts is growing for both low-wattage and high-wattage lamps, as these ballasts prove competitive against incandescent and halogen lamps as well as standard HID systems. “Right now, retail is the No. 1 application for electronic HID ballasts,” noted James Hultgren, ECS marketing manager at Osram Sylvania. “This is in conjunction with more ceramic metal halide lamps being used for accent lighting in retail applications.”

“At the current time, retailers are opting to utilize electronic HID technology primarily for downlighting and track lighting based on the benefits that ceramic metal halide lamps offer to these types of applications,” noted John Cummings, director of HID product management at Advance. “However, the use of 320W to 400W products in warehouses, factories, and big box retail applications is beginning to

take hold based on their ability to reduce long-term cost of ownership.”

Benefits and trends

In addition to offering a number of benefits that can save energy and increase quality, electronic HID ballasts allow for substantially more fixtures per circuit, lumen depreciation improvement (allowing lower-wattage lamps), constant lamp power (tighter regulation of lamp performance regardless of voltage variation), quiet operation, consistent color for ceramic metal halide lamps, maximized lamp life, elimination of flickering, and lamp monitoring with automatic shutoff at end of life (which can improve safety).

“With electronic HID ballasts, users get higher lumens per watt vs. electromagnetic ballasts, especially in high-wattage applications,” said Brelus. Depending on the application, he noted, payback can be as little as two years, with significant ongoing cash flow each year afterward.

“These features and benefits appeal to end-users desiring energy savings, minimized total cost of ownership, and safety,” said Cummings. “In addition, electronic HID technology appeals to retailers who are interested in differentiating their offerings with lighting, as the use of electronic HID ballasts in conjunction with ceramic metal halide lamps enables superior color control.”

Trends in electronic HID ballasts include:

- **Increasing versatility.** Electronic HID ballasts are steadily increasing in applications and versatility while decreasing in size and cost. Meanwhile, lamp and ballast manufacturers are partnering on joint dedicated lamp and ballast development.

In addition, wattages have been expanding, with ballasts now available for 20W, 39W, 50W, 70W, 100W, 150W, 175W, 200W, 250W, 320W, 400W, and 450W lamps. Hultgren estimates that 39W and 70W lamp applications make up 50% of the electronic HID market.

“Currently, 70W applications are highly popular, but interest in 39W is strong and demand for 20W, 100W, and 150W products is growing steadily,” offered Cummings. “Market demand for 250W to 400W applications is currently smaller, but has more upside potential.”

Brelus agrees. “I see big growth in the conversion of 400W metal halide lamp and electromagnetic ballast applications to 250W, 320W, or 350W applications due to the lamp lumen depreciation benefits and energy savings derived from the use of electronic HID ballasts with lower-wattage HID lamps,” he said.

- **Decreasing size.** A number of models now offer versatile multiwattage and multivoltage operation. “Electronic HID ballasts with multiwattage capability and an ability to run on 208V to 277V provide a heightened level of application versatility,” Brelus added.

Meanwhile, ballasts have steadily been decreasing in size. Since 1998, typical ballast volume has decreased by 25% to 75%, depending on the wattage. “Miniaturization is expected to allow the pairing of electronic HID ballasts with ceramic metal halide lamps,” said Brelus.

Buyer beware

According to John Cummings, director of HID product management at Advance: “Electronic HID ballasts are more sensitive to extreme temperatures and can’t necessarily be used in every application where magnetic HID was used previously.”

Added John Brelus, general manager of ballast products for GE Consumer & Industrial: “Be careful when attempting to pair high-frequency electronic ballasts with leading-edge ceramic metal halide lamps. Ceramic metal halide lamps will operate only on a low-frequency ballast design.”

BALLASTS

"This will present a compelling energy savings story for retailers now using a halogen solution."

"Particularly in the track lighting arena, this trend has enabled the introduction of smaller fixture designs and has subsequently broadened the range of applications for electronic HID systems," Cummings noted.

- **Dimming.** Dimming ballasts are currently available for higher-wattage lamps from 250W to 400W. Brelus sees cost-effective dimming as an emerging trend—a small market that is poised for growth. "As daylight harvesting initiatives continue to gain steam, dimming applications and products will grow with those efforts," he said. He also pointed out that costs need to come down further and that some performance metrics, such as lamp efficacy decreases related to dimming HID lamps, need to improve.

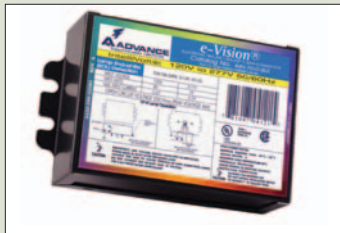
Cummings believes that dimming may be part of the future of electronic ballasts for low-wattage lamps, but says that for color-critical applications, new lamp technology that minimizes color shift during dimming will be needed.

"I expect all wattages to be available in dimming in the next few years," added Hultgren.

- **Cost reduction.** While the average cost of magnetic HID ballasts has been slowly increasing since the late 1990s, the average cost of electronic HID ballasts has been steadily declining. As costs are reduced, the electronic option becomes more cost effective and competitive.

"There is a big opportunity out there for distributors to upsell current customers from older HID electromagnetic lamp ballast systems to new HID electronic lamp ballast systems," said Brelus. "Fifteen to 20 years ago the linear fluorescent segment was primarily a T12 magnetic ballast solution. Now look at the growth the market has experienced with electronic T8 and T5 solutions since the early 1990s. At GE, T8 now represents more than 50% of linear lamp shipments." ■ ■ ■

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Size-reduced electronic ballasts

A full 26% smaller than their predecessors, **Advance's** size-reduced e-Vision electronic ballasts for 70W and 100W metal halide and high-pressure sodium lamps offer users enhanced flexibility within a variety of retail downlighting, accent lighting, and institutional, office, and outdoor applications.

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Commercial-grade T8 electronic ballasts

Fulham's WorkHorse Commercial-Grade T8 fluorescent electronic ballasts are available for 1x, 2x, 3x, and 4x T8 lamps in 17W, 25W, and 32W sizes. The WorkHorse T8 is suited for commercial and industrial applications, with UL and cUL approvals.

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Electronic HID ballast

GE's UltraMax is an integral single-unit, electronic, low-frequency HID ballast that operates five different wattage (250W, 300W, 320W, 350W, and 400W) CMH lamps, and is field retrofittable. The "external" ballast selector switch and auxiliary quartz restrike feature come standard on all units.

For information circle 308 on card



Fluorescent dimming ballast

The EcoSystem ballast from **Lutron Electronics** serves as the centerpiece upon which Lutron's EcoSystem fluorescent lighting control solution is built. EcoSystem provides daylighting, occupant sensing, personal control, and building-wide control in a simple and cost-effective system; it facilitates any combination of sensors or wallstations to control the lighting environment and energy costs of any space without interface or power packs.

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Emergency ballasts



Embassy Series emergency ballasts from **Mule Lighting** convert standard fluorescent fixtures into emergency lighting. When AC power fails, the compact battery packs automatically shift to emergency mode, operating either one or two lamps, and provide 90 to 120 minutes of emergency run time.

For information circle 310 on card

Small and efficient

The **Sylvania** Quicktronic MH (metal halide) is small and efficient, operates silently, and provides energy savings up to 15% compared to magnetic ballasts. Installation is simplified by a single-piece ballast that replaces the ballast, capacitor, ignitor, and mounting brackets of conventional systems. Two lightweight mounting styles allow for easy assembly in any fixture application.



For information circle 312 on card