

ELECTRONIC
METAL HALIDE
BALLASTS



HATCH

Power Solutions for the Lighting Industry



Hatch brings the latest technology to Electronic Metal Halide Ballasts

Ceramic Metal Halide Lamps are today's standard for commercial and architectural lighting applications. Wide ranging and versatile, Ceramic Metal Halide Lamps outperform conventional quartz lamps. Hatch Electronic Metal Halide Ballasts with Resonant Start Technology (RST) raise the Metal Halide Lamp benchmark even further! Hatch Electronic Metal Halide Ballasts are available in numerous sizes, case configurations and with options to meet specific commercial lighting requirements.

FLEXIBLE SIZE OPTIONS

From industry standard package sizes to ultra-small packages for 20 to 150 watt lamps (up to 50% smaller than other available products), Hatch offers a variety of sizes that gives designers creative freedom like never before. For example, we feature a slim ballast that measures only 1.4" wide to blend onto all existing standard size 120-volt tracks in the marketplace.

TRUE REMOTE MOUNTING

Most magnetic and electronic ballasts must be located within a very short distance from the lamp, the *Hatch Electronic Metal Halide Ballast can be mounted 50 feet (standard) or more than 300 feet away (special order)*. (See Remote Mounting Specification for complete details.)

SUPERIOR COLOR UNIFORMITY

Our superior line regulation over unprecedented input voltage variations of up to $\pm 20\%$, and our superior lamp voltage regulation of $\pm 1\%$, ensure accurate lamp wattage control. This essentially eliminates the color variations from CMH lamps that can result from line voltage and lamp voltage fluctuations.

TRUE FAULT PROTECTION

Hatch's microprocessor-controlled protection system features patented designs and exclusive copyrighted software and associated electronics that guard against short circuits, open circuits, no lamp, hot lamp shutdown, retry and ignition failure. In fact, under abnormal conditions, *Hatch Electronic Metal Halide ballast, will shut down in just seconds*, while other manufacturers ballast systems never shut down or require up to 39 minutes to shut down after a fault is detected.

OPEN CIRCUIT VOLTAGE SAFETY

Under a no-lamp-in-socket condition, with the power on, the Hatch ballast gives zero volts across the lamp terminals and only 100 volts from terminal to ground as compared with some ballasts that have a continuous 4 to 5 kilovolt output under the same conditions.

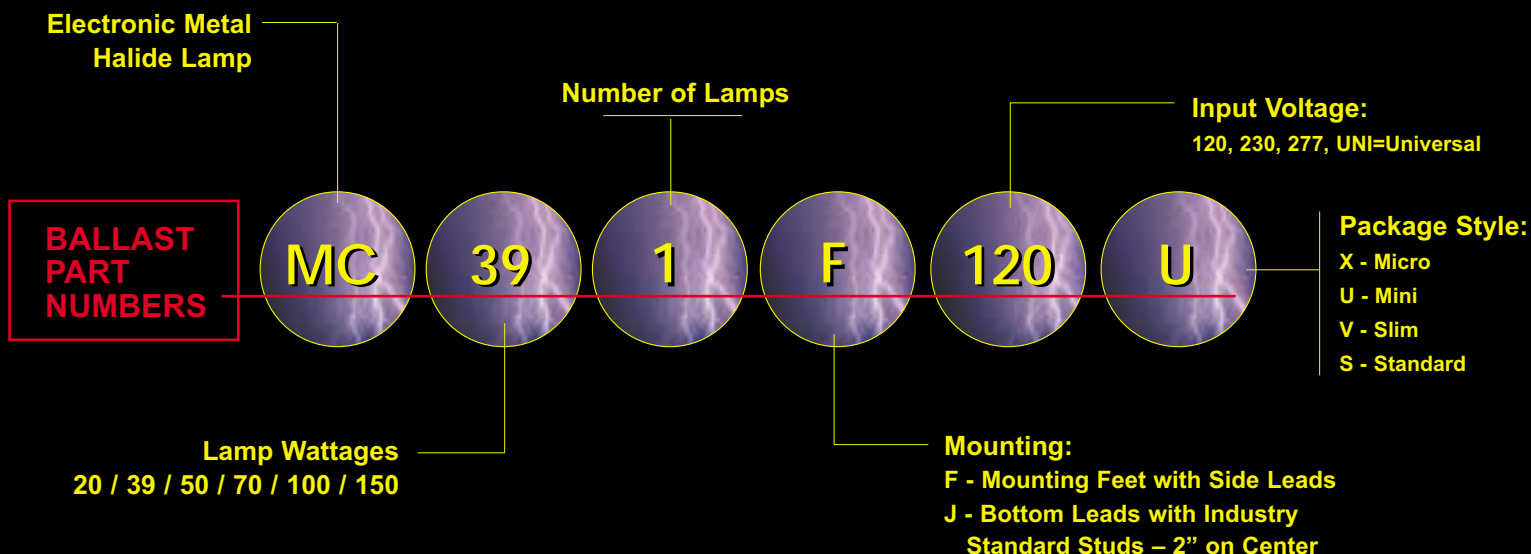
WHY CHOOSE ELECTRONIC METAL HALIDE BALLASTS FROM HATCH?

- Improved lumen maintenance
- Extended photometric lamp life
- Low profile, lightweight, many case styles
- Constant lumen output over a wide input voltage range and lamp voltage variation
- Constant color output over a wide input voltage range and lamp voltage variation
- Significant energy savings as compared to magnetic ballasts
- Rapid fault protection
- Up to 300 ft. remote mounting

HATCH

Power solutions for the lighting industry.

Understanding Hatch Electronic Metal Halide Ballast Item Numbers.



Hatch Electronic Metal Halide Ballasts combine safety, innovation and superior performance.

Unparalleled Safety

All Hatch Electronic Metal Halide Ballasts feature "intelligent" technology to insure safe lamp performance, and incorporate industry leading safety standards.

True Fault Shutdown Protection

Highly advanced protection systems will immediately shutdown the ballast in any of the following events: open circuit (no lamp), short circuit, defective lamp, rectifying currents, partial glow discharges, lamp end-of-life (high voltages). Hatch's rapid shutdown feature (within 3 seconds) prevents damage to fixture components and eliminates possible safety hazards, as compared to magnetic ballasts with no shutdown feature or some electronic ballasts which take up to 39 minutes before shutting down under adverse conditions.

Thermal Protection

Hatch Electronic Metal Halide Ballasts incorporate thermal protection.

Hatch Transient Protection

Hatch Electronic Metal Halide Ballasts employ MOVs for transient protection. Hatch Electronic Metal Halide Ballasts are in compliance with ANSI/IEEE guidelines and are able to withstand 7kV transient pulses, electrostatic discharges of 20kV, in 120V units short term excursions of 140 VAC and in 277V units short term excursions of 320V.

FCC EMI Compliance: Code of Federal Regulations, 47 CFR Part 18

Federal laws regarding compliance to 47 CFR Part 18 for the prevention of electromagnetic interference and radio frequency interference to telecommunications equipment is enforced by the FCC.

Every Hatch Electronic Metal Halide Ballast complies with 47 CFR Part 18, non-consumer limits to prevent any EMI/RFI interference with telecommunications systems and equipment.

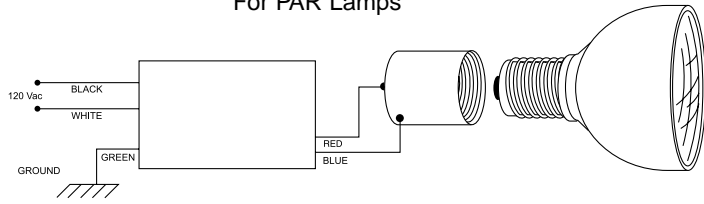
Hatch Compliance Listings

- UL Listed and C-UL Listed, CE available
- All Hatch Electronic Metal Halide Ballasts are listed for Outdoor Type 1 applications
- Thermal protection suitable for recessed lighting fixtures



WIRING DIAGRAMS

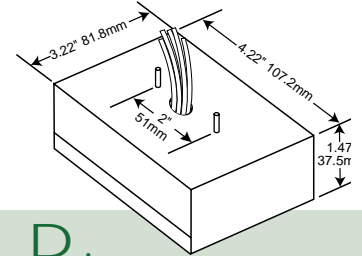
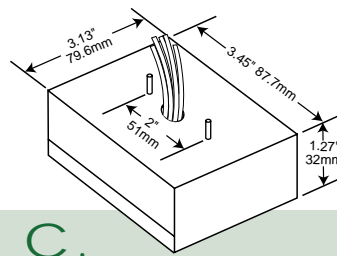
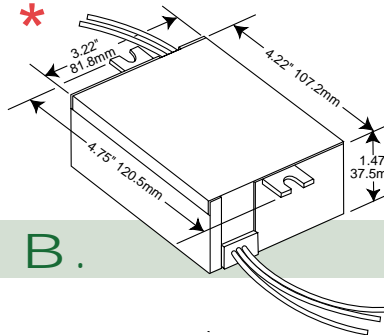
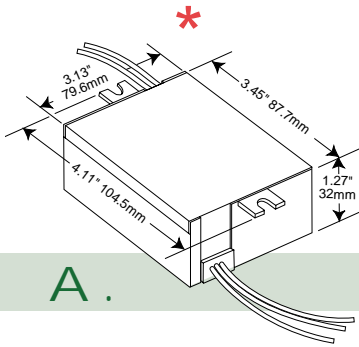
For PAR Lamps



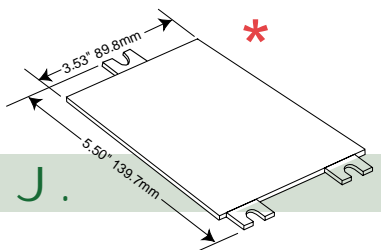
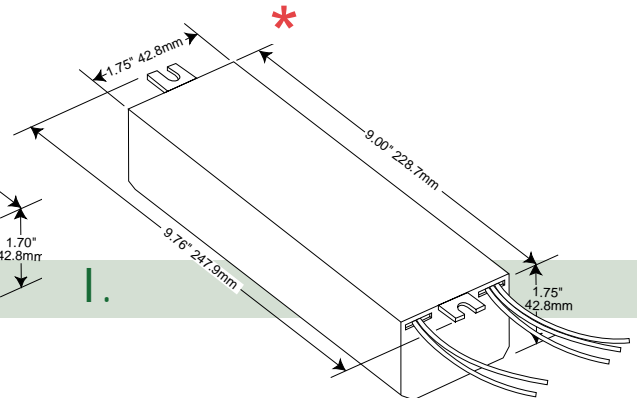
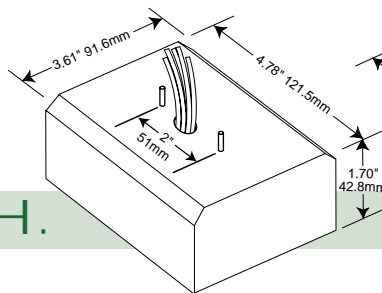
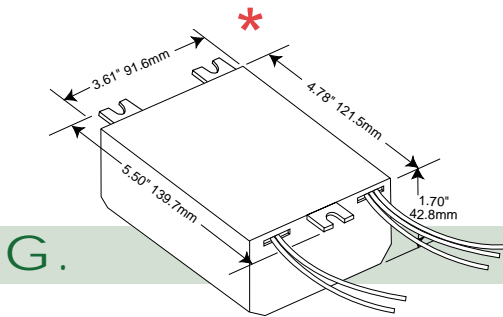
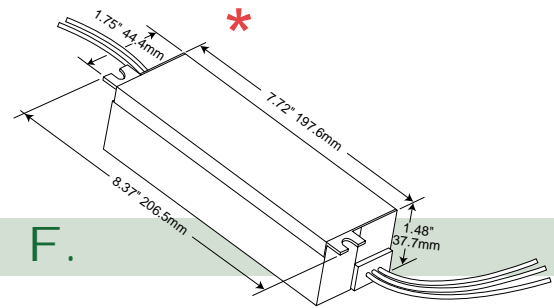
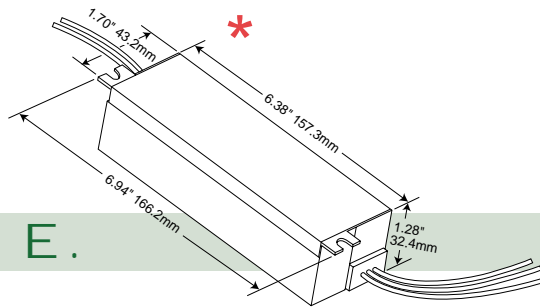
For Double Ended or Bi-Pin Lamps



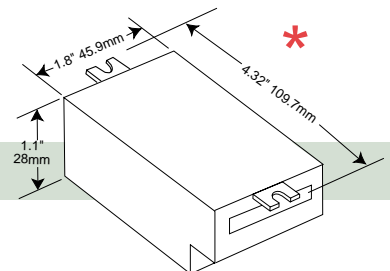
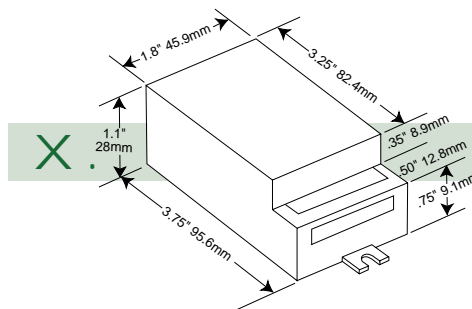
CASE DIMENSIONS



*Center line to center line is .16" less than end to end on models with mounting feet.



MC-MP – Mounting plate for adapting Hatch 20/39/50/70 Mini Case Side Lead Ballast to industry standard footprint.



Note: In an effort to keep our products at the forefront of the lighting industry, case dimensions may change. Please consult your Hatch representative for confirmation or updated information.

Electronic Metal Halide Ballasts

Watts	GE	OSRAM	PHILIPS	No. Lamps	Input Wattage	Input Volts	Input Amps	Case Dim.	Hatch Item Number
20	CMH20/TC	NA	NA	1	22	UNI**	0.20/0.10	X	MC20-1-F-UNIX
						120	0.20	A	MC20-1-F-120U
								C	MC20-1-J-120U
						277	0.09	A	MC20-1-F-277U
								C	MC20-1-J-277U
39	CMH39/TC CMH39/TU CMH39PAR20 CMH39PAR30	MC39T6 MCP39PAR30 MCP39PAR20	CDM35/T6 CDM35/PAR20 CDM35/PAR30	1	43	120	0.36	A	MC39-1-F-120U
								C	MC39-1-J-120U
								E	MC39-1-F-120V
						277	0.16	A	MC39-1-F-277U
								C	MC39-1-J-277U
								E	MC39-1-F-277V
						UNI*	0.36 0.16	A	MC39-1-F-UNIU
								C	MC39-1-J-UNIU
								E	MC39-1-F-UNIV
50	NA	NA	MHC50/U/M(P)	1	55	120	0.46	B	MC50-1-F-120U
								D	MC50-1-J-120U
						UNI*	0.20	G	MC50-1-F-UNIS
							0.46	B	MC50-1-F-UNIU
							0.20	D	MC50-1-J-UNIU
								F	MC50-1-F-UNIV
70	CMH70/TC CMH70/TU CMH70/TD CMH70/C/U CMH70/U CMH70PAR30 CMH70PAR38	MC70T6 MCP70/C/U MCP70/U MCP70PAR30 MCP70PAR38	CDM70/T6 CDM70/TD CDM70/PAR30 CDM70/PAR38 MHC70/C/U MHC70/U	1	77	120	0.63	B	MC70-1-F-120U
								D	MC70-1-J-120U
								F	MC70-1-F-120V
						277	0.27	B	MC70-1-F-277U
								D	MC70-1-J-277U
								F	MC70-1-J-277V
						UNI*	0.63 0.27	G	MC70-1-F-UNIS
								B	MC70-1-F-UNIU
								D	MC70-1-J-UNIU
								F	MC70-1-F-UNIV
100	CMH100/C/U CMH100/U CMH100PAR38	MC100T6 MCP100/U MCP100/C/U MCP100PAR38	CDM100/PAR38 MHC100/C/U MHC100/U	1	110	120	0.94	G	MC100-1-F-120U
								H	MC100-1-J-120U
								I	MC100-1-F-120V
						277	0.41	G	MC100-1-F-277U
								H	MC100-1-J-277U
								I	MC100-1-F-277V
150	CMH150/T/U CMH150/TD	MC150T6	MHC150/U/M(P) CDM150/T6 CDM150/TD	1	164	120	1.39	G	MC150-1-F-120U
								H	MC150-1-J-120U
								I	MC150-1-F-120V
						277	0.60	G	MC150-1-F-277U
								H	MC150-1-J-277U
								I	MC150-1-F-277V

Consult factory for compatible lamp types as new lamp types are being added regularly.

*120-277 Volts **120-240 Volts

Electrical/Mechanical Specifications

INPUT

Frequency45-65Hz/DC

Lamp Wattage

Regulation vs Input1%

Power Factor> 0.99

Total Harmonic Distortion< 5%

OUTPUT

Lamp Wattage Regulation Over+/-1%

Lamp Voltage Range Frequency150Hz

Lamp Current C.F.<1.3

Open Circuit Voltage0-Volts When Unit in Shutdown Mode

Ignition Voltage/Frequency2.5kV pk @23.7kHz FM

Short Circuit ProtectionYes

Thermal ProtectionYes

Open Circuit / No Lamp / Hot Lamp Shutdown, Retry and

Ignition Failure ProtectionSoftware controlled with retry at

1 min, 12 min and 23 min then shutdown. Power on reset

End User Defined Software AvailableYes

MECHANICAL / ENVIRONMENTAL

Minimum Starting Temperature-30°C

Lamp Distance from BallastStandard 50' Special Order 300' +

Maximum Case Temperature80°C

EmiFCC Part 18 Class A

Sound RatingA

WarrantyUp to 5 Years

Safety ListingUL / C-UL / CE Type 1 Outdoor

Hatch Electronic Metal Halide Ballast Offer Superior Performance

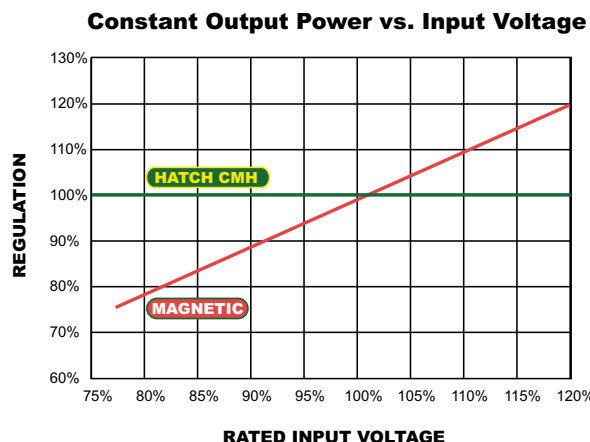
The Hatch line of Electronic Metal Halide Ballasts supply superior line and lamp voltage regulation, thus delivering virtually constant power over extended line and lamp voltage ranges. By incorporating highly advanced microprocessor control, and the latest generation of components, Hatch Electronic Metal Halide Ballasts provide unparalleled performance compared to conventional magnetic ballasts, and even outperform other electronic ballasts.

Superior Output Regulation vs. Line Voltage

Line Voltage varies greatly from place to place. Higher electric utility loads everywhere are causing more variations in Line voltages as load sharing and rationing become more commonplace. Superior regulation of electronic ballasts is critical to maintaining the integrity of constant light output and overall lamp life. Hatch Ballasts feature superior regulation characteristics giving maximum variation of only 0.5% in lamp wattage over a WIDER input voltage range than other electronic ballasts: 90volts - 145volts, (+/-20%). There is typically at least 19% variation in lamp wattage with magnetic ballasts under the same conditions.

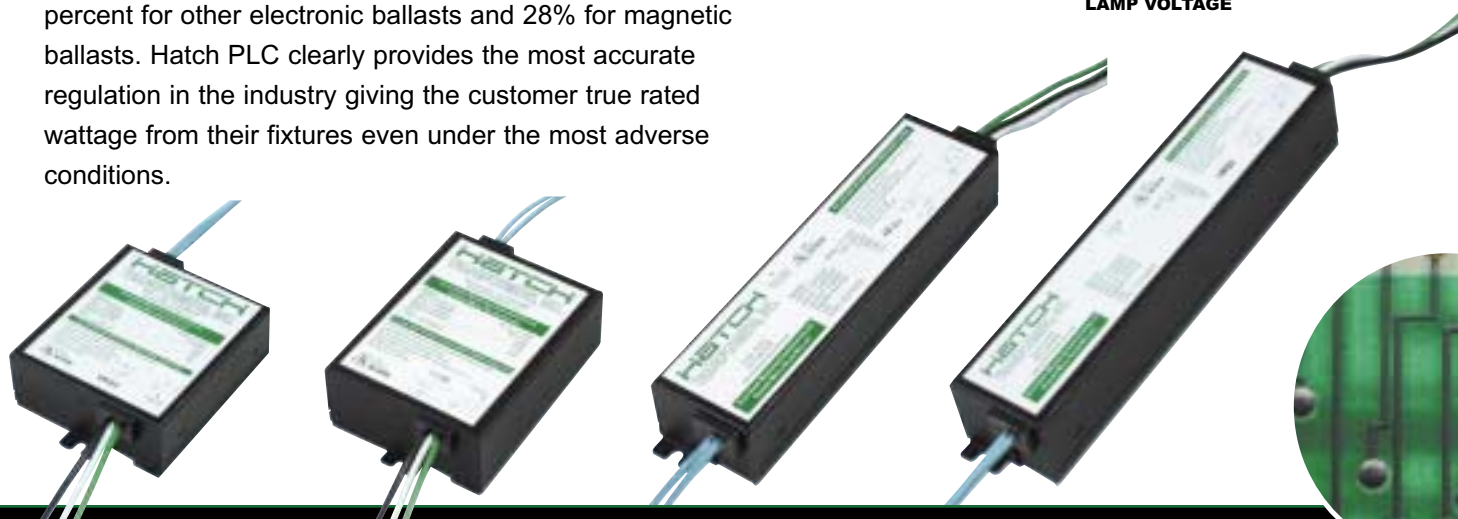
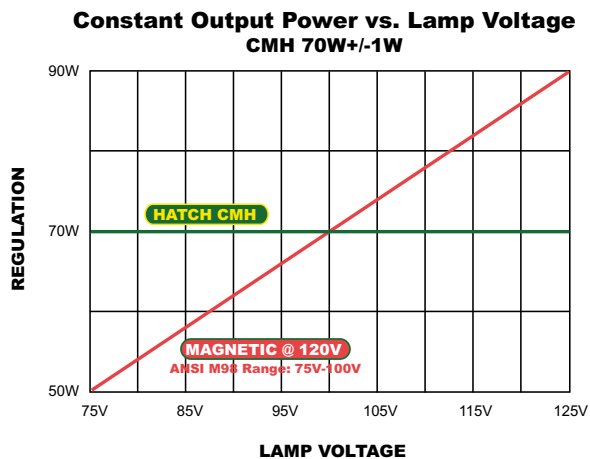
With Input Voltage Variations of +/-20%: 90 volts - 145 volts

- Hatch - less than 0.5% variation in lamp wattage
- Lag magnetic - typically 19% variation in lamp wattage



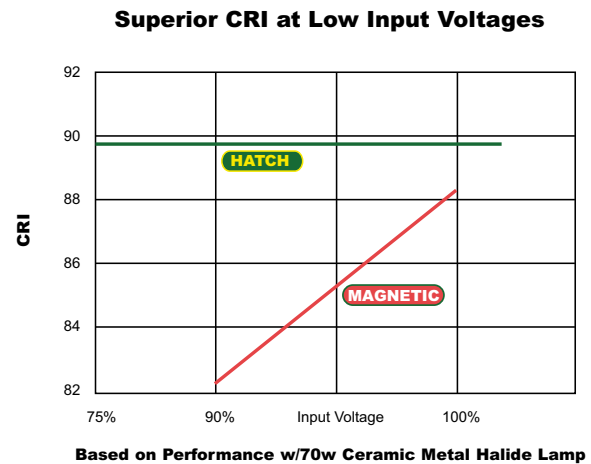
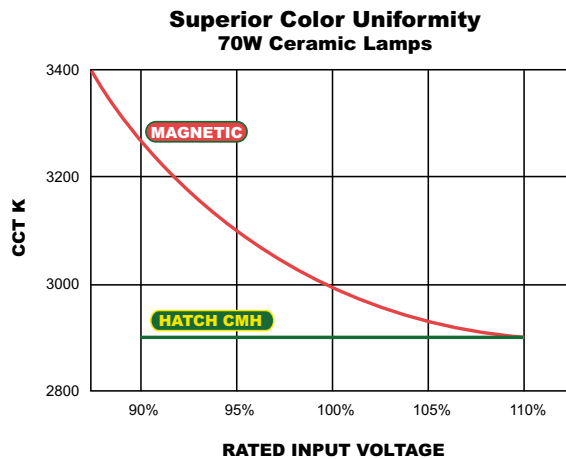
Superior Output Regulation vs. Lamp Voltage

Lamp voltages, set by the lamp manufacturer can vary up to 20 volts from lamp to lamp on NEW lamps. Lamp voltage over the life of the lamp can vary up to 40 volts from its original voltage due to numerous design and aging characteristics. To optimally operate a Electronic Metal Halide lamp at its rated WATTAGE over this variable lamp voltage range, Hatch Electronic Metal Halide Ballast incorporate proprietary POWER LOOP CONTROL (PLC). PLC is accomplished using the Hatch onboard microprocessor in conjunction with Hatch's patented design to regulate lamp wattage within 1% of rated wattage as compared to 3 to 6 percent for other electronic ballasts and 28% for magnetic ballasts. Hatch PLC clearly provides the most accurate regulation in the industry giving the customer true rated wattage from their fixtures even under the most adverse conditions.



Color Consistency and Uniform Lumen Output

Lamp wattage variation causes Electronic Metal Halide lamps to exhibit color shift. Conventional magnetic ballasts do not have the intelligence to compensate for fluctuations in line voltage and lamp voltages, therefore cannot deliver constant power to the Electronic Metal Halide lamp over extended line and lamp voltage ranges. Hatch Electronic Metal Halide Ballasts practically eliminate color variations on ceramic metal halide lamps and maintain constant output wattage to the lamp.



Extended Photometric Life

With the Hatch Electronic Metal Halide Ballast soft edge square wave lamp operation and microprocessor controlled lamp strike strategy, the lamp life is extended and lumen depreciation is reduced compared to magnetic and many other electronic HID ballasts.

Shutdown and Safety Features

Detects hot lamp and shuts down the ballast until the lamp has cooled followed by automatic timed restrike. Detects no lamp and safely shuts down the ballast. Detects end of life lamps and shuts down the ballast preventing annoying "cycling" as seen with magnetic and many other electronic ballasts. Detects rectifying currents and shuts down ballast.

Cost Benefit Analysis

Designing a lighting system to incorporate the Hatch Electronic Metal Halide Ballasts can result in lower overall installation costs, higher energy savings, added flexibility in lighting patterns.

Fixtures Per Branch Circuit

Lamp	120V Ballast	Maximum Input Current Rating	# Fixture / 16A Loading
39W	Magnetic	0.75	21
	Hatch HID	0.36	47
70W	Magnetic	1.7	9
	Hatch HID	0.63	25
100W	Magnetic	2.4	6
	Hatch HID	0.94	17
150W	Magnetic	3.65	4
	Hatch HID	1.39	11

Energy Savings

Lamp Wattage	POWER CONSUMPTION Magnetic	Hatch CMH	Savings
39W	53W	43W	17%
70W	94W	77W	17%
100W	129W	110W	14%
150W	185W	164W	11%

Since 1985, Hatch has been supplying the highest quality, architectural grade power lighting solutions to OEM, distributor, contractor and end user customers. Innovative technology, rigid quality standards, superior product performance and continuous improvement throughout our company are the benchmarks of Hatch Transformers, Inc.

Hatch is the recognized market leader in the design and manufacture of electronic transformers and ballasts for lighting applications.

Hatch manufactures Electronic Metal Halide Ballasts with patented Resonant Start Technology™ (RST) for ceramic metal halide lamps, Electronic and Magnetic Transformers for low voltage halogen lighting, and Electronic Fluorescent Ballasts for energy efficient fluorescent lamps (CFL).

Our ongoing dedication to the lighting industry through new product development, application of the latest technologies and manufacturing processes affords our customers with a continuous stream of new products.

As a result, we provide the lighting industry with some of the smallest, technologically advanced power lighting solutions. This affords both lighting designers and manufacturers a level of options and product performance to support their creative endeavors.

