

# Product Overview

## Core & Coil

Core & coil ballasts are used in over 90% of all HID fixtures. Universal's core & coil models are available for all HID lamp types, including single-, dual-, tri-, quad- and multi-volt designs. For added versatility and reduced inventory costs, Universal has also introduced the industry's first Multi-5™ ballast (120, 208, 240, 277, or 480 volt), featuring a 480-volt tap on a conventional quad-tap ballast.

Our core & coil models are ideal for a wide variety of lighting applications, including factories, warehouses, gymnasiums and retail stores. All these ballasts feature precision-wound coils, ensuring even heat dissipation and the highest electrical integrity.

Universal's Universal Precise™ is the next generation in core & coil technology, featuring a smaller, light-weight design and improved temperature performance. Universal Precise™ fits virtually all applications, and has no exposed live metal parts. There are no plastic extrusions, which prevents breakage during shipping. Color-coded leads make installation easy.

## 50 Hertz

Universal offers 50 Hz core & coil ballasts to meet the rapid growth in demand in international markets. Our ballasts are available for 220, 230, and 240 volt electrical systems.

## F-Can

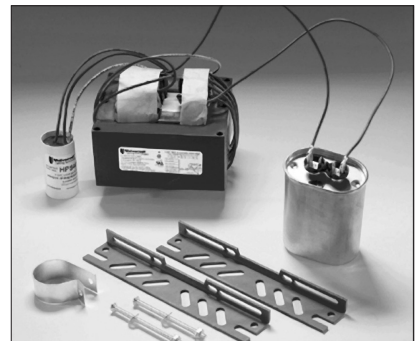
These ballasts are used primarily for indoor downlighting applications where quiet operation is essential. All the components of these ballasts are enclosed in a fluorescent-style ballast can and are thermally protected.



F-Can Ballasts



Core and Coil Ballasts



HID Ballast Kits

# Nomenclature

## UNIVERSAL PRECISE™

### ABBREVIATIONS

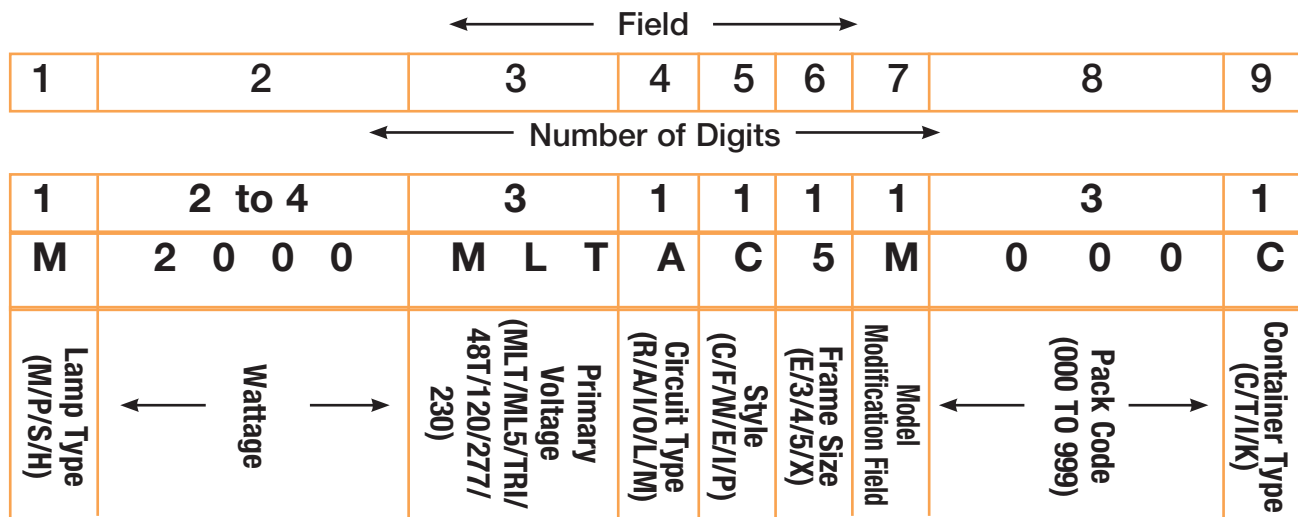
<b>CWA</b>	Constant Wattage Autotransformer
<b>CWI</b>	Constant Wattage Isolated
<b>ISO</b>	Regulated Lag
<b>R-HPF</b>	Reactor—High Power Factor
<b>R-NPF</b>	Reactor—Normal Power Factor
<b>HX-HPF</b>	Lag Type — High Reactance Autotransformer—High Power Factor
<b>HX-NPF</b>	Lag Type — High Reactance Autotransformer—Normal Power Factor

### UL Bench Top Rise Temperature Code

To facilitate UL inspection, the UL Bench Top Rise Temperature Code is shown on the Universal Core & Coil Ballast label as 1029X. 1029 is the UL Standard for HID Ballasts, and the X is the temperature code. If a fixture is UL listed for 1029D, then automatically all ballasts with an A, B, C or D temperature classification are acceptable for use within that same fixture.

### UL Bench Top Rise Letter Code Temperature Range for Class H (180° C) Ballasts

A < 75°C	B 75°C < 80°C	C 80°C < 85°C
D 85°C < 90°C	E 90°C < 95°C	F 95°C < 100°C



Field	Description
1	(M) Metal Halide, (P) Pulse Start Metal Halide, (S) High Pressure Sodium
2	35 to 1500 Watts (Varies from two to four digits)
3	(MLT) Quad, (ML5) Multi-5, (TRI) TriVolt, (48T) 480/120, (120) 120, (277) 277, (230) 230V/50Hz
4	(R) Reactor, (A) CWA, (I) CWI, (O) IsoReg, (L) High Reactance/Lag, (M) MagLag
5	(C), C&C, (F) F-Can, (W) Weatherproof, (E) Encased/Potted C&C (I) Indoor Encased
6	(E) E&I, (3) 3x4, (4) 4-3/4, (5) 5-3/4, (X) Non Core and Coil
7	Model Modification Field
8	Pack Code (000 to 999, per pack code listing)
9	(C) Carton, (T) Tray, (I) Individual, (K) Kit

# Distributor Replacement Kits

Universal's HID distributor replacement kits contain the appropriate core & coil, a properly rated capacitor, and all other components required for ballast replacement. Our kits are the quickest and easiest to install of any on the market, thanks to unique design features like:

- Prewired capacitor and ignitor (if required) to save installation time and reduce wiring errors.
- Color-coded leads to reduce risk of incorrect wiring inside the fixture.
- Features that exceed UL standards, including capacitors that offer trip fault protection.
- Simple installation instructions and troubleshooting tips.
- UPS shippable box.

Our kit offerings include many quad voltage (120, 208, 240, or 277 volt) and 480 volt core & coil ballasts, as well as the new Multi-5 five-voltage ballast. 480 volt ballasts are equipped with a 120 volt tap to accommodate stand by lighting.

Also available for Metal Halide and High Pressure Sodium applications, Universal Lighting's Multi-5™ Ballast-Lamp Replacement Kit. This easy to carry convenient all-in-one kit ensures ballast lamp compatibility.

Distributor replacement kit cartons are packaged in master cartons in quantities from 1 to 6 units. Master carton quantities can be found on Universal's list and distributor price sheets.

## Quad, 480 Volt, Multi-5™ and Multi-5™ Uni-Pak™ Distributor Replacement Kits

LampType	Wattage	Voltage	Frame Size	Old Part Number	New Part Number
Metal Halide	175	120/208/240/277	3 x 4	1130-91R-500K	M175MLTAC3M500K
	175	Multi-5	3 x 4	New	M175ML5AC3M500K
	175	Multi-5™ Uni-Pak™	3 x 4	New	M175ML5AC3M555K
	175	480-120	3 x 4	1130-31-500K	M17548TAC3M500K
	250	120/208/240/277	3 x 4	1130-92-500K	M250MLTAC3M500K
	250	Multi-5	3 x 4	New	M250ML5AC3M500K
	250	Multi-5™ Uni-Pak™	3 x 4	New	M250ML5AC3M555K
	250	480-120	3 x 4	1130-32-500K	M25048TAC3M500K
	250	120/208/240/277	4.25 x 4.75	1130-92R-500K	M250MLTAC4M500K
	250	Multi-5	4.25 x 4.75	New	M250ML5AC4M500K
	250	Multi-5™ Uni-Pak™	4.25 x 4.75	New	M250ML5AC4M555K
	250	480-120	4.25 x 4.75	1130-32R-500K	M25048TAC4M500K
	400	120/208/240/277	4.25 x 4.75	1130-93U-500K	M400MLTAC4M500K
	400	Multi-5	4.25 x 4.75	1130-826S-500K	M400ML5AC4M500K
	400	Multi-5™ Uni-Pak™	4.25 x 4.75	New	M400ML5AC4M555K
	400	480-120	4.25 x 4.75	1130-33R-500K	M40048TAC4M500K
	1000	120/208/240/277	4.25 x 5.75	1130-97-500K	M1000MLTAC5M500K
	1000	Multi-5	4.25 x 5.75	New	M1000ML5AC5M500K
	1000	Multi-5™ Uni-Pak™	4.25 x 5.75	New	M1000ML5AC5M555K
	1000	480-120	4.25 x 5.75	1130-57-500K	M100048TAC5M500K
1500	120/208/240/277	4.25 x 5.75	1130-99R-500K	M1500MLTAC5M500K	
1500	480-120	4.25 x 5.75	1130-69R-500K	M150048TAC5M500K	

# HID CORE & COIL BALLASTS

## METAL HALIDE

- 60 Hz
- Minimum starting temperature: -30° C
- High Power Factor models available
- Feature CWA design

**MH**  
**250-400**  
**WATT**

Input Volts	Catalog* Number	Circuit Type	Watts Input	Max Input Current	Nom Open Circuit Voltage	Fuse Rating	Wir Dia	Dimensions			Capacitor				Total Weight (lbs.)	Ignitor		UL Bench Top Rise		
								Ref Dwg	A	B	µF	Min Volt	Dry Film			Oil Filled			Catalog Number	Max Distance to lamp (ft)
<b>(1) 250 WATT M58 METAL HALIDE LAMP - 4.75" Frame</b>																				
120 or	M250MLTAC4M	CWA	290	2.40	310	8	1	PC2	3.35	3.53	15	400	1.65	3.82	1.91x2.91	2.7	8.0	n/a	n/a	B
208 or				1.40		5														
240 or				1.20		4														
277				1.05		4														
120 or	M250ML5AC4M	CWA	290	2.42	300	8	2	PC2	1.82	3.62	15	360	1.65	3.82	1.91x2.91	2.7	10.8	n/a	n/a	A
208 or				1.40		5														
240 or				1.20		4														
277 or				1.00		3														
480				0.60		2														
<b>(1) 400 WATT M59 METAL HALIDE LAMP</b>																				
120	M400120AC4M	CWA	454	4.00	300	10	5	PC2	2.0	3.86	24	360	1.85	3.82	1.91x2.91	3.1	9.3	n/a	n/a	E
120 or	M400TRIAC4M	CWA	455	3.80	297	10	3	PC2	2.00	3.90	24	360	1.85	3.82	1.91x2.91	3.1	10.5	n/a	n/a	D
277 or				1.50		5														
347				1.30		5														
120 or				4.00		10														
208 or	M400MLTAC4M	CWA	458	2.30	300	8	1	PC2	2.0	3.86	24	360	1.85	3.82	1.91x2.91	3.1	10.0	n/a	n/a	E
240 or				2.00		5														
277				1.70		5														
120 or				4.00		10														
208 or				2.30		8														
240 or	M400ML5AC4M	CWA	458	2.00	300	5	2	PC2	2.0	3.86	24	360	1.85	3.82	1.91x2.91	3.1	11.0	n/a	n/a	E
277 or	M40048TAC4M	CWA	458	1.70	300	5	3	PC2	2.0	3.9	24	360	1.85	3.82	1.91x2.91	3.1	11.0	n/a	n/a	E
480				1.00		50														
480	M40048TAC4M	CWA	458	1.00	300	3	4	PC2	2.0	3.9	24	360	1.85	3.82	1.91x2.91	3.1	11.0	n/a	n/a	E

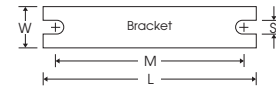
See page 4-19 for Reference Drawings and Wiring Diagrams.

# HID CORE & COIL BALLASTS

## METAL HALIDE

MH

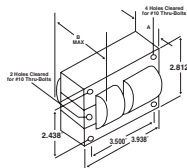
Description of popular ballast modifications (Fields 8 and 9 see p. 4-10)	
000	Core & Coil ballast only (no bracket, no capacitor)
200	Core & Coil ballast with welded bracket and without capacitor
500	Core & Coil ballast with standard capacitor, no bracket
500K	Core & Coil ballast distributor replacement kit with capacitor and adjustable mounting brackets
502K	Core & Coil ballast distributor replacement kit with capacitor and adjustable mounting brackets plus capacitor boot. Available for tri-volt products for Canadian market
518	Core & Coil ballast with dry capacitor, no bracket
700	Core & Coil ballast with standard capacitor, and welded bracket
718	Core & Coil ballast with dry capacitor, and welded bracket



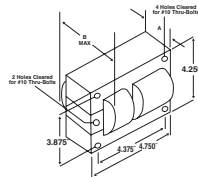
Ref. Dwg.	L	W	M	S
PC1	5.25"	1.25"	4.60"	0.25"
PC2	7.75"	2.75"	6.10"	0.25"
PC3	7.75"	2.75"	6.10"	0.25"

See p. 4-6 for adjustable mounting brackets and detailed bracket drawings.

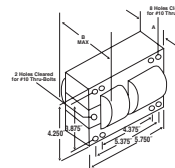
REFERENCE DRAWING PC1



REFERENCE DRAWING PC2

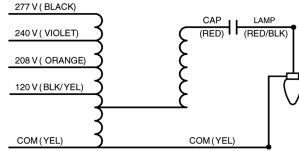


REFERENCE DRAWING PC3

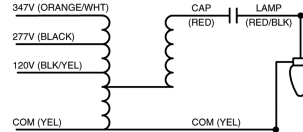


### WIRING DIAGRAMS

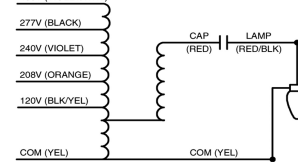
Wiring Diagram 1



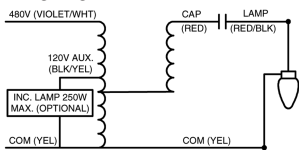
Wiring Diagram 2



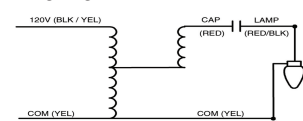
Wiring Diagram 3



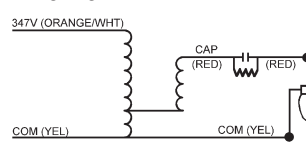
Wiring Diagram 4



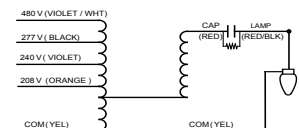
Wiring Diagram 5



Wiring Diagram 6

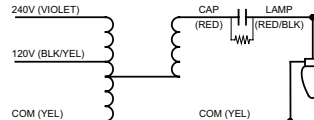


Wiring Diagram 16



Note: Nominal dimensions provided above Contact Universal for drawings and/or tolerances

Wiring Diagram 19



HID  
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