

specifications:

Metrolight SmartHID™ Electronic Ballast

270 Watt CMH

100/150/250-400 Watt - HPS

175/200/250/320/350/400/450 Watt - MH



Operating Specifications




Metrolight SmartHID™ Electronic Ballasts' superior lumen maintenance enables the use of lower wattage lamps without sacrificing maintained light levels. Fully programmable, the ballasts incorporate unique control abilities, including SmartHID™ auto profile dimming, 0-10V analog dimming and full MADLI digital control with real time feedback.

General Input Specifications	
Frequency	50/60Hz
Inrush current	<25A
Harmonics (at nominal conditions)	Fully complies with EN61000-3-2
Total Harmonic Distortion	<10% at 120V, <10% at 208V, <15% at 277V
Input current protection	Fuse (Internal)
Continuous full range dimming	<ul style="list-style-type: none"> ➤ 50% - 100% of full power (standard configuration) ➤ Minimum dimming level can be programmed anywhere from 35% - 100% depending on lamp type, or can be programmed for reverse dimming by special configuration ➤ Analog dimming current draw 1.5mA per luminaire, maximum number of fixtures = 1.5mA x sensor current
Dimming options	<ul style="list-style-type: none"> ➤ 0-10V Analog dimming by relay, ambient sensor, daylight sensor or any other compatible sensor ➤ Bi level dimming by relay or dry contact closure ➤ MADLI Digital dimming - with individual control and real-time feedback ➤ SmartDIM Auto profile dimming
Lumen maintenance	> 90% over lamp life (depending on lamp type)

General Output Specifications	
Open circuit voltage	300V
Ignition voltage	<4kV
Frequency	106KHz
Output regulation	+/- 1% of nominal lamp wattage with +/- 10% variance in input voltage. Regulates output +/- 1% for changes in lamp voltage

General Specifications	
Dimensions (LxWxH)	8.46" x 3.43" x 2.16" / 215 x 87 x 55mm (includes mounting feet)
Weight	3.08lb / 1.4kg
Operating temperature range	-30°C to +65°C / -22°F to 149°F
Maximum case temperature (Tc)	85°C / 185°F at test point
Operating humidity	0 to 95% RH non-condensing
Remote mounting distance	Up to 10 meters/33 feet. Longer mounting distance configurations available upon special request

General Specifications Continued

EMC	FCC Title 47 Part 18 C (non-consumer): EN55015:2006 If the Smart Ballast is installed within a lighting fixture, an external dedicated Metrolight Line Adapter may be required (EU only). Contact Metrolight customer support for more information. EN61547; EN61000-3-2; EN61000-3-3
Regulatory Approvals	UL1029 & UL 935, Outdoor Type 1, suitable for recessed use. EN61347-2-12 UL Listed    Nr. 40026719
Surge Protection	IEEE C62.41 Category C Low Between phase and neutral 6KV / 3KA Between line and ground 10KV / 1KA

Protections

Self-protection mechanisms	In the event of a short circuit, or open circuit; If the lamp fails to light; At the end of the lamp's life; Input current protection by internal fuse; Advanced surge protection between phase and neutral and between line and ground; Advanced output protection against arcing or shorting to ground
Heat Management	If the Tc rises beyond 90°C / 194°F during use, the SmartHID™ ballast may switch itself off. If the ballast's Tc temperature reaches beyond 85°C / 185°F during use, the SmartHID™ Ballast will gradually reduce its output power to 50%, allowing the ballast to cool. When the Tc falls below 85°C / 185°F again, the ballast will return to full output power

Dimming Specifications

Dimming delay (standard configuration)	Ballasts will ignore all dimming signals for the first 15 minutes after being switched on in order to allow the lamp to fully warm up & stabilize as per ANSI recommendations. The dimming delay can be disabled by special configuration
Analog dimming (standard configuration)	10V or grey/purple wires separated - 100% power; 0V or grey/purple shorted together - 50% power. Dimming is continuous for dimming signal between >0V & <10V. (Dimming can be reversed or maximum dimming value can be set to any level from 35-99% by special configuration)
Analog dimming fade time (standard configuration)	Fade time from 50% to 100% power - 15 seconds Fade time from 100% to 50% power - 15 seconds (Dimming fade time can be individually modified to anything from 15 seconds to 30 minutes by special configuration)
Auto profile dimming (standard auto dimming configuration)	Designed for outdoor applications such as parking lots, ballasts with auto profile dimming will automatically dim to 50% power without any external controls or triggers, starting one hour before the midpoint (based on the average of the previous three days' operating hours) for a period of 6 hours. In outdoor applications where the midpoint is ~ midnight, dimming will automatically take place between ~ 11p.m. - 5a.m. (23:00hr - 05:00hr). (The auto profile dimming times and percentages can be modified by special configuration to include up to 16 different steps per cycle). NOTE: There is no extra charge for this feature, but if you do not request or order a ballast with auto profile dimming, the feature will not be turned on.

Dimming Specifications

MADLI digital control

Each ballast will be assigned a random MADLI address between 1 and 1023. By using the digital control feature, each ballast can be individually turned on or off or dimmed. Ballasts can connect to control system by low voltage cabling, wireless or PLC. The ballasts also provide real time feedback on operational status, power consumption, lamp voltage, ballast temperature and other ballast and lamp parameters. A MADLI conversion box is required when using the MADLI control feature (sold separately). Cloud capable control software and hardware provided by Metrolight or 3rd party control providers. Consult factory for details.

Reconfiguration

Configuration capability

Via SMART TOOL control software and MADLI conversion box or just via MADLI conversion box, ballasts can be reprogrammed/ reconfigured to:

- #1. Any lamp from 175W - 450W Metal Halide or 150W - 400W HPS
- #2. Enable or disable or modify the Auto profile dimming feature
- #3. Change the MADLI digital ballast address
- #4. Any other variable which can be reconfigured as noted in this specification sheet

Input Specifications

Input values for power, voltage and current are dependant on the lamp wattage. Other input values apply across all SmartHID™ Ballasts.

Lamp Power, Voltage and Current Specifications

500W MH lamp (U.S. only)	
Input Power	501W
Input Voltage	277VAC (+10% to -15%)
Input Current	1.8A @277V
Power Factor (at nominal conditions and full power)	>0.97
450W MH lamp (U.S. only)	
Input Power	478W
Input Voltage	277VAC (+10% to -15%)
Input Current	1.75A @277V
Power Factor (at nominal conditions and full power)	>0.97
400W MH or HPS lamp	
Input Power	426W
Input Voltage	200 - 277VAC (+10% to -15%)
Input Current	2.1A @ 208V, 1.98A @ 220V, 1.83A @ 240V, 1.58A @ 277V
Power Factor (at nominal conditions and full power)	>0.96
350W MH lamp	
Input Power	375W
Input Voltage	200 - 277VAC (+10% to -15%)
Input Current	1.8A @ 208V, 1.74A @ 220V, 1.61A @ 240V, 1.4A @ 277V
Power Factor (at nominal conditions and full power)	>0.96

320W MH lamp	
Input Power	344W
Input Voltage	200 - 277VAC (+10% to -15%)
Input Current	1.7A @ 208V, 1.6A @ 220V, 1.48A @ 240V, 1.2A @ 277V
Power Factor (at nominal conditions and full power)	>0.96

270 CMH	
Input Power	290W
Input Voltage	120 - 277VAC (+10% to -15%)
Input Current	2.41A @ 120V, 1.32A @ 220V, 1.12A @ 240V, 1.04A @ 277V
Power Factor (at nominal conditions and full power)	>0.95

250W MH or HPS lamp	
Input Power	269W
Input Voltage	120 - 277VAC (+10% to -15%)
Input Current	2.3A @ 120V, 1.26A @ 220V, 1.16A @ 240V, 1.0A @ 277V
Power Factor (at nominal conditions and full power)	>0.95

200W MH lamp	
Input Power	215W
Input Voltage	120 - 277VAC (+10% to -15%)
Input Current	1.82A @ 120V, 1.0A @ 220V, 0.9A @ 240V, 0.78A @ 277V
Power Factor (at nominal conditions and full power)	>0.95

175W MH lamp	
Input Power	192W
Input Voltage	120 - 277VAC (+10% to -15%)
Input Current	1.6A @ 120V, 0.88A @ 220V, 0.8A @ 240V, 0.7A @ 277V
Power Factor (at nominal conditions and full power)	>0.94

150W HPS lamp	
Input Power	165W
Input Voltage	120 - 277VAC (+10% to -15%)
Input Current	1.4A @ 120V, 0.76A @ 220V, 0.7A @ 240V, 0.6A @ 277V
Power Factor (at nominal conditions and full power)	>0.92

100W HPS lamp	
Input Power	111W
Input Voltage	120 - 277VAC (+10% to -15%)
Input Current	0.95A @ 120V, 0.52A @ 220V, 0.47A @ 240V, 0.41A @ 277V
Power Factor (at nominal conditions and full power)	>0.90

The SmartHID™ Electronic Ballasts 100W-450W have been designed to comply with the following ANSI standards:

Ballast	ANSI Lamp Code
100W	HPS (100V) & S54 (55V)
150W	HPS S56 (100V) & S55 (55 V)
175W	MH M152
200W	MH M136, HPS S66
250W	MH M153, M80, HPS S50
320W	MH M132, M 154
350W	MH M131, HPS S129
400W	MH M135, M155, HPSS51
450W	MH M144

Please consult factory for lamps not listed above.

US Part Numbers

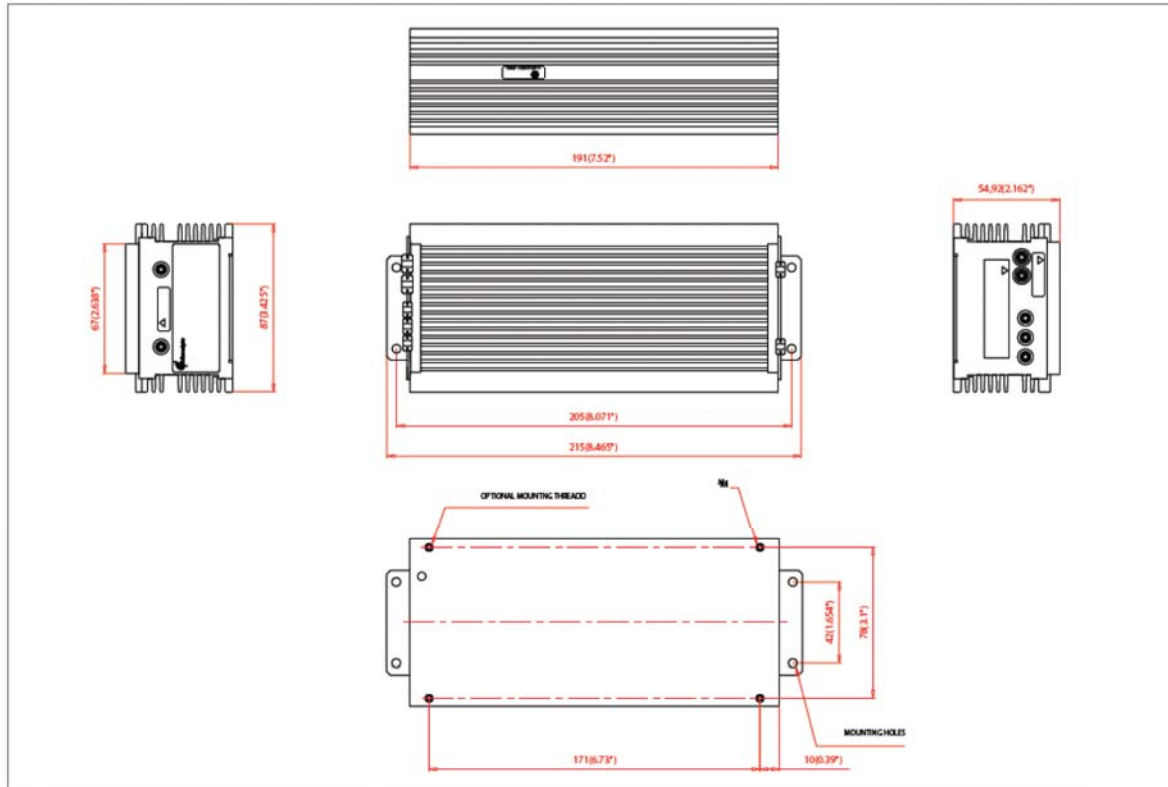
Type	MH/HPS	Power	Description*	Standard Configuration Part Number	Standard Auto Profile Dimming Part Number
SmartHID™	MH	175W	M175MH-US-DD	8890008	8890071
		200W	M200MH-US-DD	8890020	8890077
		250W	M250MH-US-DD	8890002	8890070
		320W	M320MH-US-DD	8890004	8890072
		350W	M350MH-US-DD	8890003	8890043
		400W	M400MH-US-DD	8890001	8890073
		450W	M450MH-US-DD	8890021	8890078
	HPS	100W 55V	M100S-US-DD-55V	8890015	N/A
		150W 55V	M150S-US-DD-55V	8890040	N/A
		150W 100V	M150S-US-DD-100V	8890025	N/A
		250W	M250S-US-DD	8890005	N/A
		400W	M400S-US-DD	8890006	N/A

Europe Part Numbers

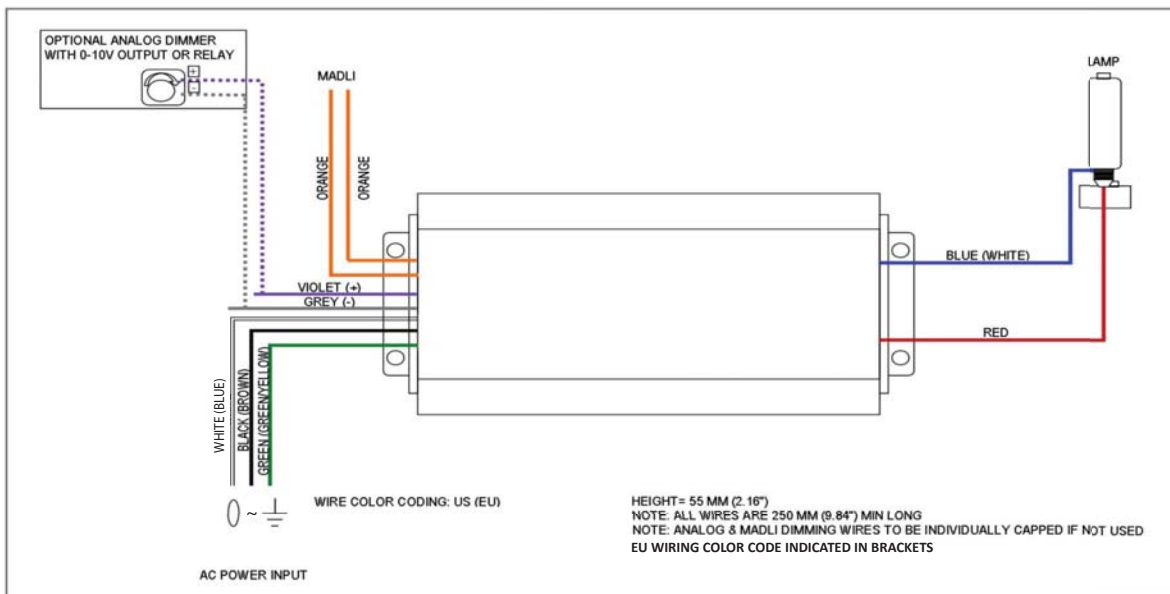
Type	MH/HPS	Power	Description*	Standard Configuration Part Number
SmartHID™	MH	200W	M200MH-EU-DD	8890104
		250W 100V	M250MH-EU-DD -100v	8890122
		250W	M250MH-EU-DD	8890110
		320W	M320MH-EU-DD	8890106
		350W	M350MH-EU-DD	8890105
		400W 100V	M400MH-EU-DD -100v	8890121
		400W	M400MH-EU-DD	8890101
		HPS	100W 100V	M100S-EU-DD-100V
	150W 100V		M150S-EU-DD-100V-35%	8890102
	250W		M250S-EU-DD-35%	8890103
	400W		M400S-EU-DD-35%	8890111

* Please note: These part numbers refer to standard configurations and other standard parameters as noted in these specifications. Special configurations are available upon request.

SmartHID™ Electronic Ballast 100W - 450W | Mechanical Dimensions



SmartHID™ Electronic Ballast 100W - 450W | Wiring Diagram



About Metrolight

Metrolight provides proven energy-efficient eHID and LED solutions for high-power lighting. Metrolight's ballasts and managed lighting solutions are used in retail, industrial, commercial and municipal installations to reduce energy consumption and carbon emission by 70%. Pioneering lighting energy solutions since 1996, Metrolight operates worldwide with over 750,000 systems deployed and over 8 billion hours in operation. For more information, please visit our website at: www.metrolight.com