



BALLAST QUICK REFERENCE GUIDE

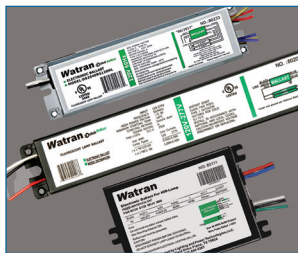
PURPOSE OF A BALLAST

Like fluorescent lamps, HID lamps are gas discharge technology. Light is produced by two electrodes located at opposite ends of an arc tube within the lamp's glass envelope. The ballast is the lamp's power supply, providing the proper starting voltage and operating current to start and sustain this arc. Ballasts consume electricity while providing the necessary circuit conditions; voltage, current and wave form, to start and operate the lamps.



HID BALLASTS

Ballasts operate a variety of lamp technologies, and Satco has a wide variety of HID ballasts. This includes possibly the widest assortment of metal halide and high and low pressure sodium ballasts in the industry. These types include pulse start, probe start and fan-cooled hydroponic/horticulture options. There are three types of ballasts for commercial applications: magnetic, hybrid and electronic.



FLUORESCENT BALLASTS

In a fluorescent lighting system, the ballast regulates the current to the lamps and provides sufficient voltage to start them. Modern ballast designs use advanced electronics to more precisely regulate the current flowing through the lamp circuit. Since they can produce a high cycle rate, you don't see the "flicker" or hear a humming coming from electronic ballasts. Different fluorescent lamps require specialized ballasts designed to maintain the specific voltage and current levels needed for varying tube designs.

BALLAST OVERVIEW

- MH Magnetic ballasts, 4 and 5 Tap
- Probe start MH ballasts, 4 and 5 Tap
- HPS Magnetic ballast, 3, 4 and 5 Tap
- MH Ballasts, ceramic type
- Hydroponic/horticulture ballasts fan-cooled
- T8 instant start, programmed start, universal voltage
- T12 instant start/rapid start electronic

- T12, T8, HO Instant start/rapid start/program start
- T5 Programmed start, universal voltage
- T5 HO Programmed start, universal voltage
- FT40DL Instant start, universal voltage
- Circline instant start, universal voltage
- Compact fluorescent programmed start, universal voltage
- T12 (800mA) Electronic sign

LED DRIVERS EXPLAINED

LED Drivers are an electronic power supply to LED modules and arrays, in the same way ballasts deliver and maintain power to HID and fluorescent lamps. The LED driver, together with LED modules or arrays together make up the LED light engine. They "drive" power to LED modules for optimal light output. Each are created differently for different applications, intensities currents and different dimming protocols.

CONSTANT CURRENT LED DRIVERS deliver a steady current to all the LED modules in a given module. This type of driver is engineered to deliver the total voltage of all the modules combined. They offer high operating efficiency, but less flexibility if different LED's or module types need to be connected.

CONSTANT VOLTAGE LED DRIVERS provide constant, steady voltage to whatever types of LED modules and arrays are connected. resistors are then incorporated to buffer voltage to each different type of LED module. Both are available programmable and non-programmable.

LED DRIVER OVERVIEW

- Constant Current drivers
- Constant Voltage drivers
- Programmable drivers
- Non-programmable drivers

HID BALLASTS



THE RIGHT POWER FOR THE JOB.

OPERATES A VARIETY OF LAMPS.

Satco has a wide variety of HID ballasts to operate the wide variety of metal halide, high pressure sodium, and low pressure sodium available in today's marketplace.

PURPOSE OF A BALLAST.

The ballast is the lamp's power supply, providing the proper starting and operating current and voltage to start and sustain this arc.

MH MAGNETIC BALLASTS - PULSE START (5 Tap is a SKU reducer)

Primary Lamp Type	Tap	Satco Product #	Ballast Code	Circuit Type	ANSI	Method	Title 20	Carton
50W PS	5	LPT83602	P50ML5AC3 PULSE MH50	CWA	M110	PULSE	N	1
70W PS	5	LPT88603	P70ML5AA3 PULSE MH70	HX-HPF	M98, M85	PULSE	N	1
100W PS	5	LPT88604	P100ML5AA3 PULSE MH100	HX-HPF	M90	PULSE	N	1
150W PS	5	LPT88605	P150ML5AA3 PULSE MH150	CWA	M102, M81	PULSE	N	1
250W PS	5	LPT88608	P250ML5AA4 PULSE MH250	CWA	M138, M153	PULSE	N	1
320W PS	5	LPT88609	P320ML5AA4 PULSE MH320	CWA	M132, M154	PULSE	N	1
350W PS	5	LPT88610	P350ML5AA4 PULSE MH350	CWA	M131	PULSE	N	1
400W PS	5	LPT88611	P400ML5AA4 PULSE MH400	CWA	M135, M155	PULSE	N	1
750W PS	5	LPT88613	P750ML5AA5 PULSE MH750	CWA	M149	PULSE	N	1
1000W PS	5	LPT84614	P1000ML5AB5 PULSE MH1000	CWA	M141	PULSE	N	1
175W PS	4	LPT85506	P175MLTEC4 PULSE MH175	CWA	M137, M152	PULSE	Y	1
200W PS	4	LPT85507	P200MLTEC4 PULSE MH200	CWA	M136	PULSE	Y	1
250W PS	4	LPT85508	P250MLTEC4 PULSE MH250	CWA	M138, M153	PULSE	Y	1
320W PS	4	LPT85509	P320MLTEC4 PULSE MH320	CWA	M132, M154	PULSE	Y	1
350W PS	4	LPT85510	P350MLTEC4 PULSE MH350	CWA	M131	PULSE	Y	1
400W PS	4	LPT85511	P400MLTEC4 PULSE MH400	CWA	M135, M155	PULSE	Y	1
70W PS	3	LPT83703	P70TRILC3 PULSE MH70	HX-HPF	M98, M85	PULSE	N	1
100W PS	3	LPT83704	P100TRILC3 PULSE MH100	HX-HPF	M90, M140	PULSE	N	1
150W PS	3	LPT83705	P150TRILC3 PULSE MH150	HX-HPF	M102, M142	PULSE	N	1
175W PS	3	LPT83706	P175TRILC3 PULSE MH175	CWA	M137, M152	PULSE	-	1
200W PS	3	LPT83707	P200TRIAC3 PULSE MH200	CWA	M136	PULSE	-	1
250W PS	3	LPT83708	P250TRIAC4 PULSE MH250	CWA	M138, M153	PULSE	-	1
320W PS	3	LPT83709	P320TRIAC4 PULSE MH320	CWA	M132, M154	PULSE	-	1
350W PS	3	LPT83710	P350TRIAC4 PULSE MH350	CWA	M131	PULSE	-	1
400W PS	3	LPT83711	P400TRIAC4 PULSE MH400	CWA	M135, M155	PULSE	-	1
750W PS	3	LPT83713	P750TRIAC5 PULSE MH750	CWA	M149	PULSE	-	1
1000W PS	3	LPT83714	P1000TRIAC5 PULSE MH1000	CWA	M141	PULSE	-	1
750W PS	480/120	LPT83413	P75048TAC5 PULSE MH750	CWA	M149	PULSE	N	1



MH MAGNETIC BALLASTS - PROBE START (5 TAP IS A SKU REDUCER)

Primary Lamp Type	Tap	Satco Product #	Ballast Code	Circuit Type	ANSI	Method	Title 20	Carton
MH175	5	LPT87606	M175ML5AA3 PROBE MH175	CWA	M57	PROBE	N	1
MH250	5	LPT87608	M250ML5AA4 PROBE MH250	CWA	M58	PROBE	N	1
MH400	5	LPT87611	M400ML5AA4 PROBE MH400	CWA	M59	PROBE	N	1
MH1000	5	LPT87614	M1000ML5AA5 PROBE MH1000	CWA	M47	PROBE	N	1
MH1500	5	LPT81615	M1500ML5AC5 PROBE MH1500	CWA	M48	PROBE	N	1
MH175	4	LPT81506	M175MLTAC3 PROBE MH175	CWA	M57	PROBE	N	1
MH400	4	LPT81511	M400MLTAC4 PROBE MH400	CWA	M59	PROBE	N	1
MH1000	4	LPT81514	M1000MLTAC5 PROBE MH1000	CWA	M47	PROBE	N	1
MH1500	4	LPT89515	M1500MLTAB5 PROBE MH1500	CWA	M48	PROBE	N	1
MH400	480/120	LPT81411	M40048TAC4 PROBE MH400	CWA	M59	PROBE	N	1
MH1000	480/120	LPT81414	M100048TAC5 PROBE MH1000	CWA	M47	PROBE	N	1
MH175	3	LPT81706	M175TRIAC3 PROBE MH175	CWA	M57	PROBE	N	1
MH250	3	LPT81708	M250TRIAC4 PROBE MH250	CWA	M58	PROBE	N	1
MH2400	3	LPT81711	M400TRIAC4 PROBE MH400	CWA	M59	PROBE	N	1
MH1000	3	LPT81714	M1000TRIAC5 PROBE MH1000	CWA	M47	PROBE	N	1



HPS MAGNETIC BALLASTS - 5 & 4 TAP

Primary Lamp Type	Tap	Satco Product #	Ballast Code	Circuit Type	ANSI	Method	Title 20	Carton
250W HPS	5	LPT86608	S250ML5AA4 HPS250	CWA	S50	-	N	1
400W HPS	5	LPT86611	S400ML5AA4 HPS400	CWA	S51	-	N	1
600W HPS	5	LPT86612	S600ML5AA4 HPS600	CWA	S106	-	N	1
1000W HPS	5	LPT86614	S1000ML5AA5 HPS1000	CWA	S52	-	N	1
50W HPS	4	LPT82502	S50MLTLC3 HPS50	HX-HPF	S68	-	N	1
70W HPS	4	LPT82503	S70MLTLC3 HPS70	HX-HPF	S62	-	N	1
100W HPS	4	LPT82504	S100MLTLC3 HPS100	HX-HPF	S54	-	N	1
150W HPS	4	LPT82505	S150MLTLC3 HPS150	HX-HPF	S55	-	N	1
200W HPS	4	LPT86507	S200MLTAA4 HPS200	CWA	S66	-	N	1



NOTES - TAPS DEFINED:

5 Tap: 120/208/240/277/480V

3 Tap: 120/208/347V

4 Tap: 120/208/240/277V

UNV: 120 - 277V

HPS MAGNETIC BALLASTS - 3 TAP

Primary Lamp Type	Tap	Satco Product #	Ballast Code	Circuit Type	ANSI	Method	Title 20	Carton
50W HPS	3	LPT82702	S50TRILC3 HPS50	HX-HPF	S68	120/277/347	N	1
70W HPS	3	LPT82703	S70TRILC3 HPS70	HX-HPF	S62	120/277/347	N	1
100W HPS	3	LPT82704	S100TRILC3 HPS100	HX-HPF	S54	120/277/347	N	1
150W HPS	3	LPT82705	S150TRILC3 HPS150	HX-HPF	S55	120/277/347	N	1
250W HPS	3	LPT82708	S250TRIAC4 HPS250	CWA	S50	120/277/347	N	1
400W HPS	3	LPT82711	S400TRILC4 HPS400	CWA	S51	120/277/347	N	1
1000W HPS	3	LPT82714	S1000TRIAC5 HPS1000	CWA	S52	120/277/347	N	1

HID BALLASTS

MH ELECTRONIC BALLASTS – Ceramic Type

Primary Lamp Type	# of Lamps	Input Voltage	Satco Product#	Ballast Code	Mounting	L x W x H (Inches)	Carton
CDM20	1	120	S6792	HQEB/MH20/120LA2F 120V SQUARE	FCAN	3½ x 3 x 1¼	40
CDM35, 39	1	120	S6793	HQEB/MH39/120LA2F 120V SQUARE	FCAN	3½ x 3 x 1¼	40
CDM100	1	120	S6794	HQEB/MH50/120LA2F 120V SQUARE	FCAN	3½ x 3 x 1¼	40
CDM35, 39	1	UNV	S6795*	HQEB/MH35/123L2AF UNV RECTANGLE	JCAN	5 ½ x 3⅝ x 1½	20
CDM70	1	UNV	S6796*	HQEB/MH70/123L2AF UNV RECTANGLE	JCAN	5 ½ x 3⅝ x 1½	20
CDM100	1	UNV	S6797*	HQEB/MH100/123L2AF UNV RECTANGLE	JCAN	5 ½ x 3⅝ x 1½	20
CDM70	1	UNV	S6799	HQEB/MH70/123L1AF UNV RECTANGLE	FCAN	5 ½ x 3⅝ x 1½	20
CDM100	1	UNV	S6800	HQEB/MH100/123L1AF UNV RECTANGLE	FCAN	5 ½ x 3⅝ x 1½	20
CDM150	1	UNV	S6801	HQEB/MH150/123L1AF UNV RECTANGLE	FCAN	6 ½ x 3⅝ x 1½	20
CDM150	1	UNV	S6804*	HQEB/MH150/123L2AF UNV RECTANGLE	JCAN	6 ½ x 3⅝ x 1½	20

* Bottom Feed Studs

RELIABLE, STEADY POWER. A NECESSARY FUNCTION.

In a fluorescent lighting system, the ballast regulates the current to the lamps and provides sufficient voltage to start them.

TYPES OF BALLASTS.

There are three types of ballasts for commercial applications: magnetic, hybrid, and electronic.



T8 INSTANT START, PROGRAM START, UNIVERSAL VOLTAGE BALLASTS

Primary Lamp Type	# of Lamps	Input Voltage	Satco Product #	Ballast Code	NAED Code	Wiring Method	Carton
F32T8	1,2	120/277	LPT80210*	DB232N-MV-TP-HE	80210	Leads	10
	3	120/277	LPT80213*	DB332N-MV-TP-HE	80213	Leads	10
	4	120/277	LPT80215*	DB432N-MV-TP-HE	80215	Leads	10
	1,2	120/277	LPT80220	DB-232N-MV-TP-PS-HL	80220	Leads	10
				- Listed for: FBO16, FO17, FBO24, FO25, FBO31, FO32, FO40 & SS Equivalents - Can operate 1 lamp on 2 lamp ballast, 2 lamps on 3 lamp ballast, 3 lamps on 4 lamp ballast - For 40T8 operation use 1 lamp on 2 lamp ballast, 2 lamps on 3 lamp ballast, 3 lamps on 4 lamp ballast			
F96T8	1, 2	120/277	LPT80219	DB259-MV-TP-PIC-SL	80219	Leads	10
				- Listed for: FO96T8 & SS Equivalents - Can operate 1 lamp on 2 lamp ballast			

* Shrink wrapped for retail.

FLUORESCENT BALLASTS

T12 INSTANT START / RAPID START ELECTRONIC BALLASTS

Primary Lamp Type	# of Lamps	Input Voltage	Satco Product #	Ballast Code	NAED Code	Wiring Method	Carton
F40T12	1, 2	120/277	S5260*	DB240-MV-RSN BALLAST UNV	80205	Leads	20
• Listed for: F40T12, F30T12, F25T12 Lamp(s)							
F96T12	1, 2	120/277	S6697*	DB275ISMV	80206	Leads	20

* Shrink wrapped for retail.

T12 T8 HO INSTANT START / RAPID START / PROGRAM START

Primary Lamp Type	# of Lamps	Input Voltage	Satco Product #	Ballast Code	NAED Code	Wiring Method	Carton
T12/RS/HO	1, 2	120/277	LPT80224	DB-2110-RS-MV	80224	Leads	20
T8/IS/HO	1, 2	120/277	LPT80237	DB-286HO-MV-TP-IS	80237	Leads	10

T5 PROGRAMMED START, UNIVERSAL VOLTAGE BALLASTS

Primary Lamp Type	# of Lamps	Input Voltage	Satco Product #	Ballast Code	NAED Code	Wiring Method	Carton
FP28T5			LPT80231	DB-2S28-PS-MV			
• Listed for: FP14, FP21, FP28, FP35 Lamp(s)							

T5 HO PROGRAMMED START, UNIVERSAL VOLTAGE BALLASTS

Primary Lamp Type	# of Lamps	Input Voltage	Satco Product #	Ballast Code	NAED Code	Wiring Method	Carton
FP24T5 & F39T5	1,2	120/277	LPT80232	DB2S39PS-MV	80239	Leads	10
• Listed for: FPC22T5, FPC24T5HO, FT24DL, CF24DF, FT36DL, FP39T5HO, FPC40T5 Lamp(s)							
FP54T5	1, 2	120/277	LPT80218	DB-254HO-MV-TP-PS-SL	80218	Leads	10
	1, 2	347/480	LPT80230	DB254HO-480-TP-PS-SL	80230	Leads	10
	3, 4	120/277	LPT80236	DB4M54-PS-MV-90	80236	Leads	10
• Listed for: FP54T5/HO, FT55DL, FPC55 Lamp(s)							
FP80T5	1	120/277	S5220	QTP1X80T5HO/UNV/PSN/NL	49150	Wiretap Connections	20
• Listed for: FP54T5/HO, FP80, FT80DL Lamp(s)							

FT40DL INSTANT START, UNIVERSAL VOLTAGE BALLASTS

Primary Lamp Type	# of Lamps	Input Voltage	Satco Product #	Ballast Code	NAED Code	Wiring Method	Carton
FT40	1	120/277	Y49428	QHE1X40DL/UNIV ISN-SC	49428	Leads	10
	2	120/277	Y49429	QHE2X40DL/UNIV ISN-SC	49429	Leads	10
	3	120/277	Y49430	QHE3X40DL/UNIV ISN-SC	49430	Leads	10
• Listed for: FT40DL/28W/SS/IS							

FLUORESCENT BALLASTS

CIRCLINE INSTANT START, DEDICATED VOLTAGE BALLASTS

Primary Lamp Type	# of Lamps	Input Voltage	Satco Product #	Ballast Code	NAED Code	Wiring Method	Carton
FC6, FC8	1	120	S5296	DB1S26RS120N W/SOCKET	80225	Leads & Socket	60
FC12, 16, 30	1	120	S5297	DB1S40RS120N W/SOCKET	80226	Leads & Socket	60
FC8 & 12	2	120	S5298	DB2S2232RS120N W/SOCKET	80227	Leads & Socket	60
FC12 & 16	2	120	S5299	DB2S3240RS120N W/SOCKET	80228	Leads & Socket	60

COMPACT FLUORESCENT PROGRAMMED START, UNIVERSAL VOLTAGE BALLASTS

Primary Lamp Type	# of Lamps	Input Voltage	Satco Product #	Ballast Code	NAED Code	Wiring Method	Carton
CF13 & CF18	1, 2	120/277	LPT80207	DBC218MVRSN/KIT	80207	Wiretap Connections	20
• Listed for: 1 or 2 CF18DD/E or CF18DT/E Lamp(s)							
CF26	2	120/277	LPT80208	DBC226MVRSN/KIT	80208	Wiretap Connections	20
			• Listed for: 1 or 2 CF26DD/E or CF26DT/E Lamp(s) • Also Listed for: 1 ea. CF32DT/E, CF42DT/E, F28/2D, F38/2D, FPC40T5, FT40DL • Also Listed for: 2 ea. CF13DS/E, FT18DL/RS, CF18DF, F21/2D Lamps				
CF26, 32, 42	1, 2	120/277	LPT80204	DBC242MVRSN/KIT	80204	Wiretap Connections	20
CF57, 70	1	120/277					

T12 (800MA) ELECTRONIC SIGN BALLASTS

Primary Lamp Type	# of Lamps	Input Voltage	Satco Product #	Ballast Code	Total Lamp Length	Carton
T12/RS/HO	1 - 2	120/277	LPT80239	DB-0216-12-MV-TP	2 ft. - 16 ft.	1
	1 - 4	120/277	LPT80240	DB-1040-14-MV-TP	10 ft. - 40 ft.	1
	1 - 4	120/277	LPT80241	DB-0432-14-MV-TP	4 ft. - 32 ft.	1
	4 - 6	120/277	LPT80242	DB-0848-46-MV-TP	8 ft. - 48 ft.	1
• Listed for all T12 HO lamps 18" thru 96": F18T12, F24T12, F30T12, F42T12, F48T12/SS, F48T12, F60T12, F64T12, F72T12, F84T12, F96T12/SS, F96T12/CT, F96T12						

STEP DOWN TRANSFORMERS 480V TO 277V

Primary Lamp Type	# of Lamps	Input Voltage	Satco Product #	Ballast Code	Total Lamp Length	Carton
		180/277	80-960	AT150-43-277C-C STEP DOWN TRA		18
		180/277	80-961	AT-375-43-277V STEP DOWN TRANS		8

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Product specifications and availability are subject to change without notice.

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