Balastros Tipo Intemperie (en bote)

vapor de mercurio.

POTENCIA DE LAMP.	TIPO DE LAMP.	TENSION DE LINEA	NUMERO DE CATALOGO	CIRCUITO TIPO	POTENCIA DE LINEA	CORRIENTE DE LINEA B.F.P.	CORRIENTE DE LINEA A.F.P.	TENSION DE CIRCUITO ABIERTO	DIAG. DE CONEX.	F ALTURA (mm)	PESO TOTAL Kg.	FIG. No.
1-100	H-38	127	71C9139 /B	CWA	120	–	1.00	253	C	260	5.125	1
		220	71C9140 /B			–	0.60					
		254	71C9142 /B			–	0.52					
		277	71C9143 /B			–	0.47					
		440	71C9144 /B			–	0.30					
1-125	H-42	127	71C9163 /B	CWA	150	–	1.25	250	C	260	5.170	1
		220	71C9164 /B			–	0.70					
		254	71C9165 /B			–	0.62					
		277	71C9166 /B			–	0.57					
		440	71C9167 /B			–	0.36					
1-175	H-39	220	6LD9034 /B	R	190	1.5	–	220	B	122	2.200	2
		220	6HD9034 /B			–	0.92		A		2.570	
1-250	H-37	127	71B9121 /B	CWA	285	–	2.30	250	C	260	5.882	1
		220	6LD9022 /B	R	270	2.1	–	220	B	122		2
		220	6HD9022 /B	R	270	–	1.30	220	A	152		2
		220	71B9122 /B	CWA	285	–	1.31	250	C	260		1
		254	71B9124 /B	CWA	285	–	1.15	250	C	260		1
		277	71B9125 /B	CWA	285	–	1.08	250	C	260		1
		440	71B9126 /B	CWA	285	–	0.66	250	C	260		1
1-400	H-33	127	73B9115 /B	CWA	450	–	3.60	250	C	260	6.716	1
		220	6LD9016 /B	R	430	3.2	–	220	B	122	4.960	2
		220	6HD9016 /B	R	430	–	2.10	220	A	152	5.725	2
		220	73B9116 /B	CWA	450	–	2.10	250	C	260	6.716	1
		254	73B9118 /B	CWA	450	–	1.80	250	C	260	6.716	1
		277	73B9119 /B	CWA	450	–	1.65	250	C	260	6.716	1
		440	73B9120 /B	CWA	450	–	1.05	250	C	260	6.716	1

B. F. P. = BAJO FACTOR DE POTENCIA
C. W.A. = AUTO REGULADO

A. F. P. = ALTO FACTOR DE POTENCIA
R. = REACTOR L. = LAMPARA

CARACTERISTICAS

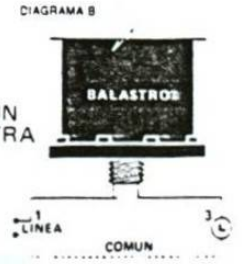
- RECIPIENTE PARA USO INTEMPERIE
- RECIPIENTE CILINDRICO DE ALUMINIO ANODIZADO
- TAPA DE ALUMINIO FUNDIDA A PRESION
- NIPLE ROSCADO Y TAPA FORMAN UNA SOLA PIEZA, GRAN RIGIDEZ
- ROSCA CONICA DE NIPLE ASA B 2.1 No. 11 1/2" 1 1/4" DE DIAMETRO
- LIGEROS
- ETIQUETA DE ALUMINIO CON INSTRUCCIONES Y DIAGRAMA DE CONEXIONES
- AISLAMIENTO 180° C
- CAPACITORES DE 90° C

FIGURA 1

FIGURA 2

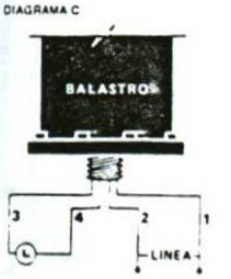
DIAGRAMA A

DIAGRAMA B



LA LINEA COMUN NO SE SUMINISTRA (USAR AWG-16)

DIAGRAMA C



Balastros Tipo Intemperie (en bote)

apor de mercurio, aditivos metálicos.*

POTENCIA DE LAMP.	TIPO DE LAMP.	TENSION DE LINEA	NUMERO DE CATALOGO	CIRCUITO TIPO	POTENCIA DE LINEA	CORRIENTE DE LINEA B.F.P.	CORRIENTE DE LINEA A.F.P.	TENSION DE CIRCUITO ABIERTO	DIAG. DE CONEX.	F ALTURA (mm)	PESO TOTAL KG.	FIG. No.
2-400	H-33	127	71A9010 /B	CW	880	–	6.90	515	B	330	12.760	1
		220	71A9011 /B			–	4.00					
		254	71A9012 /B			–	3.50					
		277	71A9013 /B			–	3.20					
		440	71A9014 /B			–	2.00					
1-700	H-35	127	71B9145 /B	CWA	770	–	6.23	420	A	305	11.250	1
		220	71B9146 /B			–	3.60					
		254	71B9148 /B			–	3.12					
		277	71B9149 /B			–	2.85					
		440	71B9150 /B			–	1.80					
1-1000	H-36	127	71B9127 /B	CWA	1075	–	8.70	420	A	330	11.702	1
		220	71B9128 /B			–	5.00					
		254	71B9130 /B			–	4.35					
		277	71B9131 /B			–	4.00					
		440	71B9132 /B			–	2.50					
1-400	*AM ó H-35	127	74B9051 /B	CWA	455	–	3.80	305	A	305	10.750	1
		220	74B9052 /B			–	2.12					
		254	74B9054 /B			–	1.90					
		277	74B9055 /B			–	1.70					
		440	74B9056 /B			–	1.10					
1-1000	*AM ó H-33	127	73B9057 /B	CWA	1070	–	8.70	425	A	305	15.000	1
		220	73B9058 /B			–	5.00					
		254	73B9060 /B			–	4.35					
		277	73B9061 /B			–	4.10					
		440	73B9062 /B			–	2.50					

B. F. P. = BAJO FACTOR DE POTENCIA
C. W. = POTENCIA CONSTANTE

A. F. P. = ALTO FACTOR DE POTENCIA
L. = LAMPARA CWA = AUTO REGULADC

CARACTERISTICAS

- RECIPIENTE PARA USO INTEMPERIE
- RECIPIENTE CILINDRICO DE ALUMINIO ANODIZADO
- TAPA DE ALUMINIO FUNDIDA A PRESION
- NIPLE ROSCADO Y TAPA FORMAN UNA SOLA PIEZA, GRAN RIGIDEZ
- ROSCA CONICA DE NIPLE ASA B 2.1 No. 11 1/2" 1 1/4" DE DIAMETRO
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- ETIQUETA DE ALUMINIO CON INSTRUCCIONES Y DIAGRAMA DE CONEXIONES
- AISLAMIENTO 180° C
- CAPACITORES DE 90° C

DIAGRAMA A

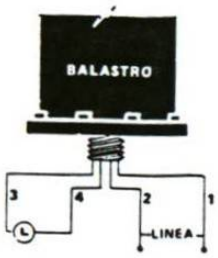

DIAGRAMA B

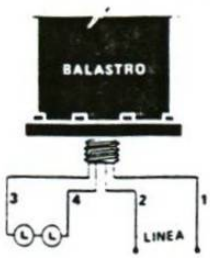

FIGURA 1

Balastros Tipo Intemperie (en bote)

sodio alta y baja presión.

POTENCIA DE LAMP.	TIPO DE LAMP.	TENSION DE LINEA	NUMERO DE CATALOGO	CIRCUITO TIPO	POTENCIA DE LINEA	CORRIENTE DE LINEA B.F.P.	CORRIENTE DE LINEA A.F.P.	TENSION DE CIRCUITO ABIERTO	DIAG. DE CONEX.	F ALTURA (mm)	PESO TOTAL Kg.	FIG. No.
1-150	S-55	127	71A8316 /B	ADELANT.	185	–	1.50	115	A	330	7.950	1
		220	71A8317 /B			–	0.90					
		254	71A8319 /B			–	0.75					
		277	71A8320 /B			–	0.70					
		440	71A8321 /B			–	0.45					
1-250	S-50	127	71A8306 /B	ADELANT.	295	–	2.35	195	A	305	7.700	1
		220	71A8307 /B			–	1.39					
		254	71A8309 /B			–	1.20					
		277	71A8310 /B			–	1.10					
		440	71A8311 /B			–	0.70					
1-400	S-51	127	71A8300 /B	ADELANT.	465	–	4.00	191	A	368	13.810	1
		220	71A8301 /B			–	2.25					
		254	71A8303 /B			–	2.00					
		277	71A8304 /B			–	1.80					
		440	71A8305 /B			–	1.15					
1-1000	S-52	127	71A8312 /B	ADELANT.	1100	–	5.10	435	A	420	25.300	1
		254	71A8314 /B			–	4.50					
		277	71A8314A /B			–	4.15					
		440	71A83115/B			–	2.60					
1-90	BAJA P.	127	71A8520 /B	HX AFP	125	–	1.05	500	A	260	7.700	1
		220	71A8521 /B			–	0.6					
		254	71A8522 /B			–	0.52					
		277	71A8523 /B			–	0.48					
		440	71A8524 /B			–	0.30					
1-135	BAJA P.	127	71A8525 /B	HX AFP	178	–	1.50	660	A	305	10.280	1
		220	71A8526 /B			–	0.87					
		254	71A8527 /B			–	0.75					
		277	71A8528 /B			–	0.69					
		440	71A8529 /B			–	0.43					
1-180	BAJA P.	127	71A8530 /B	HX AFP	220	–	1.90	660	A	305	10.280	1
		220	71A8531 /B			–	1.1					
		254	71A8532 /B			–	0.95					
		277	71A8533 /B			–	0.87					
		440	71A8534 /B			–	0.55					

B. F. P. = BAJO FACTOR DE POTENCIA

A. F. P. = ALTO FACTOR DE POTENCIA

ADELANT. = ADELANTADO

L. = LAMPARA

HX-AFP. = ALTA REACTANCIA, ALTO FACTOR DE POTENCIA

CARACTERISTICAS

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- CAPACITORES DE 90° C

DIAGRAMA A

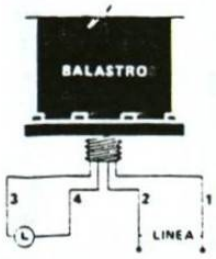


FIGURA 1

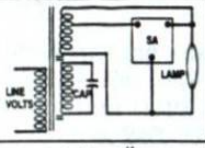
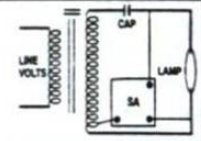
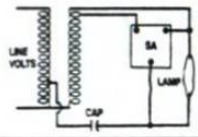
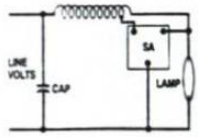
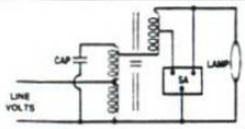
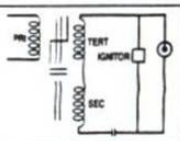
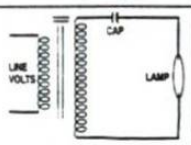
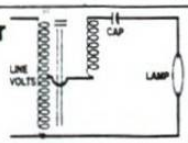
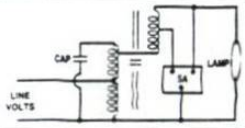
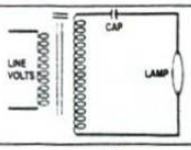
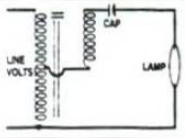
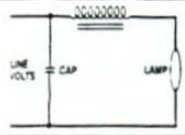
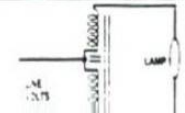
GENERAL ELECTRIC BALLAST ELECTRICAL DATA – MULTIVOLT, 60Hz
HPS, METAL HALIDE AND MERCURY

ANSI Lamp Type	Watts	Line Volts	Line-Operating Amperes	Line Watts	Power Factor %	Line-Starting Amperes	% Allowable Line Voltage Dip
HPS BALLST–REGULATOR (LAG TYPE) – MAGNETIC REGULATOR ALLOWABLE LINE VOLTAGE VARIATION: ±10%							
S-51	400	120	4.0	478		1.6	
		208	2.3	475		1.0	
		240	2.0	475		0.8	
		277	1.7	475		0.7	
		347	1.4	475		0.6	
S-67	310	120	3.3	383		1.5	
		208	2.2	382		1.0	
		240	1.7	382		0.8	
		277	1.5	382		0.7	55
		347	1.2	382	90+	0.6	to
S-50	250	120	2.5	312		1.4	25
		208	1.5	312		0.8	
		240	1.3	312		0.7	
		277	1.1	312		0.6	
		347	0.9	312		0.5	
S-66	200	120	2.2	253		1.2	
		208	1.3	251		0.9	
		240	1.1	250		0.8	
		277	1.0	250		0.7	
HPS BALLAST– REGULATOR (LEAD TYPE) – CWI ALLOWABLE LINE VOLTAGE VARIATIONL: ±10%							
S-50	250	120	2.5	296		2.0	
		208	1.5	296		1.2	
		240	1.3	296		1.0	
		277	1.2	296		0.9	
		347	0.9	296	90+	0.7	50
S-66	200	120	2.1	238	to	1.4	to
		208	1.2	238	65	1.0	10
		240	1.1	238		0.7	
		277	0.9	238		0.6	
		347	0.7	238		0.5	
HPS BALLAST– AUTO-REGULATOR (LEAD TYPE) – CWA ALLOWABLE LINE VOLTAGE VARIATION: ±10%							
S-52	1000	120	9.6	1096		5.6	
		208	5.8	1102		3.5	
		240	4.8	1096		2.9	
		277	4.4	1096		2.7	
		347	3.5	1104		2.2	
S-51	400	120	3.9	466		3.0	
		208	2.2	467		1.9	
		240	2.0	468		1.6	
		277	1.7	468		1.4	
		347	1.4	468		1.0	
S-50	250	120	2.6	300		2.6	
		208	1.5	300		1.5	
		240	1.3	300		1.2	
		277	1.2	300		1.1	
		347	0.9	300		0.7	
S-66	200	120	2.1	238		1.2	
		208	1.2	238	90+	0.7	35
		240	1.0	238	to	0.6	to
		277	0.9	238	65	0.6	10
		347	0.7	240		0.4	
S-55	150	120	1.6	189		0.9	
		208	1.0	189		0.5	
		240	0.9	189		0.5	
		277	0.7	189		0.4	
		347	0.6	189		0.4	
S-54	100	120	1.2	127		0.7	
		208	0.7	126		0.4	
		240	0.6	126		0.4	
		277	0.5	126		0.3	
		347	0.4	127		0.2	
S-62	70	120	0.8	118		0.5	
		208	0.5	119		0.4	
		240	0.4	119		0.3	
		277	0.3	119		0.3	
		347	0.3	120		0.2	
HPS BALLST– REACTOR TYPE (HIGH POWER FACTOR LAG) ALLOWABLE LINE VOLTAGE VARIATION: ±5%							
S-111	750	120	7.5	840		13.5**	
		208	4.0	820		7.0**	
		240	3.8	834		6.8**	
		480	3.2	832		6.0**	
S-55	150	120	1.6	183		2.6**	
		208	0.9	184		1.5**	
		240	0.8	184		1.3**	
		277	0.7	184		1.0**	
		347	0.4	184		0.9**	
S-54	100	120	1.0	120		2.0**	
		208	0.6	121	90	1.2**	15
		240	0.5	121	to	1.0**	to
		277	0.4	121	65	0.8**	7
		347	0.3	121		0.7**	
S-62	70	120	0.8	86		1.4**	
		208	0.5	86		0.8**	
		240	0.4	86		0.7**	
		277	0.4	86		0.7**	
		347	0.3	86		0.5**	
S-68	50	120	0.6	62		1.2**	
		208	0.4	63		0.7**	
		240	0.3	63		0.6**	
		277	0.3	63		0.5**	
		347	0.2	63		0.4**	

ANSI Lamp Type	Watts	Line Volts	Line-Operating Amperes	Line Watts	Power Factor %	Line-Starting Amperes	% Allowable Line Voltage Dip
HPS BALLAST – REACTOR TYPE (NORMAL POWER FACTOR LAG) ALLOWABLE LINE VOLTAGE VARIATION: ±5%							
S-55	150	120	3.8	187	41	4.8	
		208	2.2	187	41	2.8	
		240	1.9	187	41	2.4	
		277	1.6	187	42	2.1	
		347	1.3	187	41	1.6	
S-54	100	120	2.8	122	36	3.4	
		208	1.6	122	36	2.0	
		240	1.4	122	36	1.7	
		277	1.2	121	36	1.5	
		347	1.0	120	35	1.2	15
S-62	70	120	2.2	86	34	2.8	to
		208	1.3	86	34	1.6	7
		240	1.1	86	34	1.4	
		277	1.0	86	34	1.2	
		347	0.8	85	33	1.1	
S-68	50	120	1.8	62	30	2.0	
		208	1.0	62	30	1.2	
		240	0.9	62	30	1.0	
		277	0.7	62	31	0.9	
		347	0.6	62	31	0.7	
METAL HALIDE BALLAST – AUTO-REGULATOR TYPE (PEAD LEAD) CWA ALLOWABLE LINE VOLTAGE VARIATION: ±10%							
	1650	120	15.0	1770		9.0	
		208	9.0	1770		5.0	
		240	7.7	1770		4.4	
		277	6.3	1770		4.0	
		347	5.3	1770		3.5	
M-48	1500	120	14.2	1625		11.2	
		208	8.4	1630		6.9	
		240	7.2	1630		5.6	
		277	6.2	1630		4.7	
		347	5.0	1630		3.9	
M-47	1000	120	9.0	1063		6.6	
		208	5.4	1068		4.1	
		240	4.8	1068		3.5	
		277	4.1	1068		2.9	
		347	3.6	1068	90+	2.8	
M-59	400	120	4.0	453	to	4.0	50
		208	2.5	454	80	2.5	
		240	2.0	455		2.0	
		277	1.7	456		1.7	
		347	1.4	456		1.4	
M-58	250	120	2.5	287		2.0	
		208	1.5	288		1.2	
		240	1.2	288		1.0	
		277	1.1	288		0.8	
		347	0.9	292		0.6	
M-57	175	120	1.8	206		1.4	
		208	1.0	207		0.9	
		240	0.9	207		0.7	
		277	0.8	207		0.7	
		347	0.6	209		0.5	
METAL HALIDE BALLAST – MAGNETIC REGULATOR ALLOWABLE LINE VOLTAGE VARIATION: ±10%							
	400	120	4.0	461		1.6	
		208	2.3	461		0.9	
		240	2.0	460	90+	0.8	45
		277	1.7	460		0.7	
		347	1.3	458		0.6	
METAL HALIDE BALLAST – REACTOR TYPE (HIGH POWER FACTOR LAG) ALLOWABLE LINE VOLTAGE VARIATION: ±5%							
M-90	100	120	1.0	121		2.0**	
		208	0.6	121		1.2**	
		240	0.5	121		1.0**	
		277	0.4	121		0.4**	20
S-62	70	120	0.8	89		2.0**	
		208	0.5	89		1.2**	
		240	0.4	89		1.0**	
		277	0.3	89		0.9**	
MERCURY BALLAST – REGULATOR BALLAST (CWI) ALLOWABLE LINE VOLTAGE VARIATION: ±13%							
H-36	1000	120	9.2	1096		2.4	
		208	5.3	1092		1.4	
		240	4.5	1088		1.2	
		277	3.9	1088		1.0	
H-33	400	120	4.0	458		11.7	
		208	2.3	459		0.9	
		240	2.0	455		0.9	
		277	1.7	457		0.8	
H-37	250	120	2.4	288		1.2	
		208	1.4	288		0.7	50
		240	1.2	288		0.5	
		277	1.1	288		0.5	
H-39	175	120	1.7	205		1.0	
		208	1.0	206		0.6	
		240	0.9	206		0.5	
		277	0.7	205		0.5	
H-38	100	120	1.2	126		0.6	
		208	0.7	125		0.4	
		240	0.6	125		0.3	
		277	0.5	125		0.3	

** Note that these starting currents are power factor capacitor currents which flow if the lamp draws no current, for example, hot restart conditions. Normal current will be lower.

GENERAL ELECTRIC BALLAST CIRCUITS AND OPERATING CHARACTERISTICS

Lamp Type	Circuit Diagram	Line Volts	Voltage Input Range	Total Lamp Regulation Spread	Power Factor	Starting Current (Variation From Operating Current)	Input Voltage Dip	Ballast Losses	Crest Factor of Lamp Current
HIGH PRESSURE SODIUM	**Magnetic Regulator** 	Any Voltage	± 10%	14-18%	90% +	Lower	55% to 25%	High	1.7
	Regulator (CWI) 	Any Voltage	± 10%	20-30%	90% +	Lower	35% to 10%	Medium	1.6-1.8
	Lead-Type Regulator (Auto-regulator) (CWA) 	Any Voltage	± 10%	20-30%	90% +	Lower	35% to 10%	Medium	1.6-1.8
	Reactor 	120 Volt for 35-150 Watt 208 & 240 Volt for 200-400 Watt 480 Volt for 1000 Watt	± 5%	25%	90%+ to 80% HPF 55% to 40% NPF	Higher	15% to 7%	Low	1.4-1.5
	Lag 	240 & 277 Volt for 50-150 Watt 120 Volt for 200 & 250 Watt	± 5%	25%	90%+ to 80% HPF 50% to 30%NPF	Higher	15% to 7%	Medium	1.4-1.5
METAL HALIDE	**Magnetic Regulator** 	Any Voltage	± 10%	5%	90% +	Lower	45%	High	1.6
	Regulator (CWI) 	Any Voltage	± 10%	11-17%	90% +	Higher	50%	Medium	1.6-1.7
	Auto-Regulator (Peak Lead) (CWA) 	Any Voltage	± 10%	20%	90% +	Lower	50%	Medium	1.6-1.8
	Lag 	Any Voltage	± 5%	25%	90%+ HPF	Higher	20%	Low	1.4-1.5
MERCURY	**Regulator** (CWI) 	Any Voltage	± 13%	4%	90% +	Lower	60%	High	1.8-2.0
	Auto-Regulator (CWA) 	Any Voltage	± 10%	10%	90% +	Lower	50%	Medium	1.8-2.0
	Reactor 	240 Volt for 100-400 Watt 480 Volt for 700 & 1000 Watt	± 5%	20%	90%+ HPF 60% to 50% NPF	Higher	25%	Low	1.4-1.5
	Lag (High Reactance) 	120 Volt for 100-400 Watt	± 5%	20%	55% to 40%	Higher	25%	Medium	1.4-1.5

GUIDE FORM SPECIFICATIONS

HIGH PRESSURE SODIUM BALLASTS (35 THROUGH 1000 WATTS)

(SEE TABLE FOR AVAILABLE BALLAST TYPES)

GENERAL DESCRIPTION

The ballast shall be capable of starting and operating one _____ (*specify* 35, 50, 70, 100, 150 (55V), 200, 250, 310, 400 or 1000) watt high pressure sodium (HPS) lamp from a nominal _____ (*specify* 120, 208, 240, 277, 347 or 480) volt, 60 Hertz power source and be in full compliance with the lamp/ballast specifications available to the fixture manufacturer at the time of manufacture. The ballast, including the ignitor, must protect itself against normal lamp failure modes and shall be capable of operation with the lamp in an open or short circuit condition for six months without accelerated loss of ballast life. The ballast shall be capable of a 2,500 volt, one- minute APPLIED POTENTIAL (HI-POT) TEST and a 10,000 volt TRANSIENT INSULATION LEVEL (TIL) TEST as described in ANSI C82.4, C82.6 and C92.1.

(ALTERNATE WORDING)

The fixture manufacturer shall provide a statement that the ballast furnished is in full compliance with the lamp/ballast specifications available to the fixture manufacturer from the lamp manufacturer at the time of manufacture.

LAMP WATTAGE

The ballast design center shall not vary more than _____ (*specify* from below) from rated lamp watts for nominal line voltage and nominal lamp voltage.

Non-regulating (Reactor, Lag)	Autoregulator	Magnetic Regulator
±5%	±5%	±5%

REGULATION

The lamp wattage regulation spread (as defined in ANSI 82.4 and ANSI 82.6) at any lamp voltage, from nominal through end of rated life, shall not exceed _____ (*specify* from below) line voltage variation.

Non-regulating (Reactor, Lag)	Autoregulator	Magnetic Regulator
25% for ±5%	35% for ±10%.	18% for ±10%

(ALTERNATE WORDING)

The luminaire manufacturer shall supply ballast electrical data including lamp operating "lamp watts vs. lamp volts" traces for nominal and _____ (*specify* from below) rated line voltage to verify ballast performance and compliance with lamp specifications for the rated life of the lamp.

Non-regulating (Reactor, Lag)	Autoregulator	Magnetic Regulator
±5%	±10%	±10%

STARTING REQUIREMENTS

The ballast must reliably start and operate the lamp in ambient temperatures down to -40°F for the rated life of the lamp. The ballast primary current during starting _____ (*specify* from below) exceed normal operating current.

Non-regulating (Reactor, Lag)	Autoregulator	Magnetic Regulator
may (1.5X)	must not	must not

(ALTERNATE WORDING)

The ignitor shall contain no more than four electrical components and shall be capable of operation in a 125°C ambient temperature for up to 500 hours with a failure rate of less than 10%.

BALLAST LINE EXTINCTION VOLTAGE (DIP TOLERANCE)

The ballast shall be capable of sustaining lamp operation with a line voltage dip or sag of _____ (*specify* from below) for up to 4 seconds when operating a nominal voltage lamp with nominal voltage applied to the primary as defined in ANSI 82.6.

Non-regulating (Reactor, Lag)	Autoregulator	Magnetic Regulator
15%	35%	50%

(ALTERNATE WORDING)

The fixture manufacturer shall submit ballast electrical data including ballast operating "dip tolerance vs. lamp volts" traces for nominal and _____ (*specify* from below) rated line voltage and for nominal lamp voltage through rated end-of-life lamp voltage.

Non-regulating (Reactor, Lag)	Autoregulator	Magnetic Regulator
±5%	±10%	±10%

LAMP CURRENT CREST FACTOR (OPTIONAL)

The current crest factor (ratio of peak current to rms as defined in ANSI 82.4) shall not exceed 1.8 for _____ (*specify* from below) line voltage variation, including lamp starting, or from nominal lamp voltage through rated end-of-life voltage.

Non-regulating (Reactor, Lag)	Autoregulator	Magnetic Regulator
±5%	±10%	±10%

BALLAST LINE POWER FACTOR (OPTIONAL)

The line power factor of the lamp/ballast system shall not drop below _____ (*specify* from below) line voltage variations at any lamp voltage from nominal through rated end-of-life lamp voltage as described in ANSI 82.6.

Non-regulating (Reactor, Lag)	Autoregulator	Magnetic Regulator
(HPF) 65% for ±5% (NPF) 30% for ±5%	65% for ±10%	90% for ±10%

(ALTERNATE WORDING)

The fixture manufacturer shall supply ballast electrical data including lamp operating "line power factor vs. lamp volts" traces for nominal and _____ (*specify* from below) line voltage to verify ballast line power factor performance from nominal lamp voltage through rated end-of-life lamp voltage.

Non-regulating (Reactor, Lag)	Autoregulator	Magnetic Regulator
±5%	±10%	±10%

HPS BALLAST TYPE AVAILABILITY TABLE

(Check luminaire product page for ballast availability)

	NON-REGULATING (REACTOR, LAG)		AUTO-REGULATOR	MAGNETIC REGULATOR
Wattage	HPF	NPF		
35	120	120	N/A	N/A
50	X	X	N/A	N/A
70, 100, 150 (55V)	X	X	X	*
200, 250	**	**	X	X
310, 400	208, 240	208, 240	X	X
750	X	N/A	*	N/A
1000	480	480	X	N/A

N/A = Not Available
X = Available in all voltages *including* multivolt
* = Available in all voltages *except* multivolt

GENERAL ELECTRIC METAL HALIDE AND MERCURY BALLAST ELECTRICAL DATA – SINGLE VOLTAGE, 60Hz

ANSI Lamp Type	Watts	Line Volts	% Allowable Line Voltage Variation	Line-Operating Amperes	Line Watts	Power Factor %	Line-Starting Amperes	% Allowable Line Voltage Dip
METAL HALIDE BALLAST – AUTO-REGULATOR TYPE (PEAK LEAD) CWA								
	2000	208		11.2	2125		10.0	
		240		9.5	2115		8.5	
		277		8.3	2115		7.2	
		347		6.6	2122		5.6	
		480		4.8	2132		4.4	
	1650	120		15.0	1770		9.0	
		208		9.0	1770		5.0	
		240		7.7	1770		4.4	
		277		6.5	1765		4.0	
		347		5.4	1770		3.5	
		480		3.9	1785		3.1	
M-48	1500	120		14.4	1630		11.2	
		208		8.5	1630		6.9	
		240		7.3	1630		5.6	
		277		6.3	1630		4.7	
		347		4.8	1620		3.9	
		480	±10	3.7	1630	90+	2.8	50
M-47	1000	120		9.0	1080		6.6	
		208		5.4	1070		4.1	
		240		4.8	1080		3.5	
		277		4.1	1080		2.9	
		347		3.6	1070		2.9	
		480		2.6	1088		1.8	
M-59	400	120		4.0	450		3.5	
		208		2.3	456		2.3	
		240		2.0	456		2.0	
		277		1.7	456		1.7	
		347		1.6	457		1.4	
		480		1.0	458		1.0	
M-58	250	120		2.5	288		2.0	
		208		1.5	288		1.2	
		240		1.2	288		1.0	
		277		1.1	292		0.8	
		347		0.9	289		0.6	
		480		0.6	292		0.5	
M-57	175	120		1.8	207		1.4	
		208		1.0	207		0.9	
		240		0.9	207		0.7	
		277		0.8	207		0.7	
		347		0.6	209		0.5	
		480		0.5	207		0.3	
METAL HALIDE BALLAST – MAGNETIC REGULATOR TYPE								
	400	120		4.0	461		1.6	
		208		2.3	461		0.9	
		240	±10	2.0	460	90+	0.8	45
		277		1.7	460		0.7	
		347		1.3	455		0.6	
METAL HALIDE BALLAST – REACTOR TYPE (HIGH POWER FACTOR LAG)***								
M-90	100	120		1.0	119		2.1	
		208		0.6	119		1.2	
		240		0.5	119		1.1	
		277		0.4	119		1.0	
		480	±10	0.3	125	90+	0.6	20
M-98	70	120		0.8	89		2.0	
		208		0.5	89		1.2	
		240		0.4	89		1.0	
		277		0.3	89		0.9	
		480		0.2	94		0.5	
SUPER LOW LOSS BALLAST								
METAL HALIDE BALLAST – AUTO-REGULATOR TYPE (PEAK LEAD) CWA								
M-59	400	120		3.00	437		3.00	
		208		2.20	438		1.65	
		240		1.90	439		1.43	
		277		1.79	438		1.34	
		480	±10	0.97	444	90+	0.73	50
M-58	250	120		2.48	272		2.20	
		208		1.43	278		1.28	
		240		1.25	278		1.10	
		277		1.00	274		0.92	
		480		0.63	281		0.48	

WARNING: Size branch circuits to accomodate line-operating amperes or line starting amperes–whichever is larger.

WARNING: The data listed is typical of that obtained when *a ballast is tested under* laboratory conditions as a separate component. When these components are encapsulated, or mounted in luminaires, the values listed below will vary depending upon the enclosure being used, lamp position and lamp variations. The component value method of testing is used in order that uniform testing procedures may be followed on all ballasts.

ANSI Lamp Type	Watts	Line Volts	% Allowable Line Voltage Variation	Line-Operating Amperes	Line Watts	Power Factor %	Line-Starting Amperes	% Allowable Line Voltage Dip
MERCURY BALLAST – REGULATOR TYPE (CWI)								
H-36	1000	480		2.4	1095		0.7	
H-35	700	480		1.8	780		0.4	
H-33	400	120		4.3	464		1.8	
		240		2.1	460		0.9	
		277		1.8	460		0.7	
		480		1.1	460		0.4	
H-37	250	120		2.7	305		1.2	
		240		1.3	302		0.6	
		277	±13	1.2	300	90+	0.5	60
		480		0.7	292		0.2	
H-39	175	120		1.8	210		0.6	
		277		0.8	210		0.3	
		480		0.5	210		0.1	
H-38	100	120		1.1	127		0.7	
		240		0.6	127		0.3	
		277		0.5	127		0.2	
		480		0.3	127		0.1	
MERCURY BALLAST – AUTO-REGULATOR TYPE (CWA)								
H-36	1000	120		9.7	1082		7.4	
		208		5.6	1082		4.4	
		240		4.9	1082		3.7	
		277		4.2	1082		3.2	
		480		2.4	1082		2.0	
H-33	400	120		4.2	453		3.5	
		208	±10	2.4	453	90+	2.0	50
		240		2.1	453		1.8	
		277		1.8	457		1.5	
		480		1.1	453		0.9	
H-37	250	120		2.7	292		2.1	
		208		1.6	292		1.3	
		240		1.4	292		1.1	
		277		1.2	292		0.95	
MERCURY BALLAST – REACTOR TYPE (HIGH POWER FACTOR)***								
H-36	1000	480		2.4	1070		3.3	
H-35	700	480		1.5	735		2.2	
H-33	400	240	±5	2.0	430	90+	3.0	25
H-37	250	240		1.2	275		1.7	
H-39	175	240		0.9	195		1.5	
H-38	100	240		0.5	115		0.9	
MERCURY BALLAST – REACTOR TYPE (NORMAL POWER FACTOR)								
H-33	400	240		3.4	430	54	5.1	
H-37	250	240	±5	2.1	275	54	3.3	25
H-39	175	240		1.6	193	55	2.6	
H-38	100	240		0.9	115	53	1.6	
MERCURY BALLAST – REACTOR TYPE (NORMAL POWER FACTOR LAG)								
H-33	400	120		7.3	454	54	10.8	
H-37	250	120	±5	4.8	286	51	8.2	25
H-39	175	120		3.4	205	51	5.7	
H-38	100	120		2.0	117	48	3.2	

MERCURY BALLAST – SERIES TYPE

ANSI Lamp Type	Watts	Frequency Hz	Line-Operating Amperes	Line Watts	Power Factor %	Loading Factor ***
H-36	1000			1070	86	1.55
H-33	400			445	86	0.65
H-37	250	60	6.6	285	84	0.47
H-39	175			207	84	0.40
H-38	100			125	84	0.30

1. Input voltage variations over the full range of allowable percentage range will vary lamp wattage as shown below: MH mag-regulator = 5%; MH regulator (CWI) = 11% to 17%; MH auto-regulator (CWA) = 20%; MH lag = 12% to 15%; mercury regulator = 4%; mercury auto-regulator (CWA) = 10%; mercury reactors and lags = 20%
2. The voltage of high pressure sodium lamps changes with lamp life causing corresponding changes in lamp watts, so that the reglation cannot be stated in the same terms as for other HID lamp types. All HPS ballast types, over the full range of "allowable line voltage variation," control lamp watts within the prescribed limits of operation throughout the rated life of the lamp, as defined by trapezoidal limits in ANSI Standards for High Pressure Sodium lamps.
3. Mercury reactor ballasts listed in wattage 100 to 400 may be used at 50Hz as follows: 240 volts (60Hz) at 220 volts (50Hz). Reactors used on 220 volts are only adequate for lamp starting to 0°F.
4. All ballasts will provide satisfactory lamp starting to -20°F (-40°F for HPS) minimum over the recommended line-voltage variation.
5. Fusing: Not recommended as protection for individual HID ballast. If specified, fuse(s) should be rated 3 times maximum current. Fusing may cause nuisance interruptions. The fusing of a reactor type ballast should be avoided.

** Note that these starting currents are power factor capacitor currents which flow if the lamp draws no current, for example, hot restart conditions. Normal current will be lower.

*** Kilowatts of constant-current transformer capacity per ballast recommedned for proper operation.