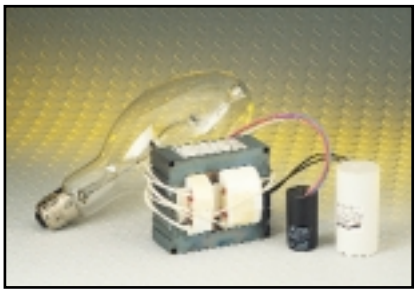
Pulse-Start SuperCWA

Metal Halide Ballasts

Extended Life, Energy-Efficient White Light Lamp/Ballast System



Function

Advance Transformer developed the SuperCWA (constant wattage autotransformer) ballast as the mainstay ballast circuit for the new 150 to 1000W pulse-start metal halide lamps. Advance's unique SuperCWA designs are a result of on-going research with the lamp manufacturers to significantly improve metal halide performance. Upgraded to incorporate lamp manufacturers' new requirements for higher "sustaining characteristics," Advance SuperCWA ballasts provide improved lamp starting and lumen maintenance.

Design Highlights

- The SuperCWA ballast circuit delivers improved metal halide performance via three separate components – a two coil autotransformer ballast, an ignitor, and a dry-film capacitor. The separation of starting and operating functions results in better lamp performance because the ballast is no longer required to deliver high open circuit voltage necessary to start traditional probe-start metal halide lamps.
- SuperCWA ballasts are available for 150, 175, 200, 250, 320, 350, 400, 450, 750 and 1000 watt pulse-start lamps, in all the popular 60hz and 50hz system voltages.
- SuperCWA ballasts provide an optimal combination of operating parameters: higher sustaining characteristics, good regulation and voltage dip tolerance, lower ballast losses, lower crest factor, faster run-up and quicker re-strike.

Applications

- Outdoor area lighting
- Gas station canopies
- Industrial, commercial, and retail facilities
- Roadways, replacing high pressure sodium

Features	Benefits
Higher sustaining characteristics	•Improved starting under marginal conditions •Improved lumen maintenance -Extends useful lamp life
Lower crest factor (1.6 vs 1.8 max allowed)	•Extended lamp life -Fewer lamp changes/lower maintenance costs •Improved lumen maintenance -Fewer fixtures required per circuit
Lower ballast losses (5-10 watts less)	•Ballast operates 5-8° cooler -Increases life of ballast and other fixture components up to 50% -Opens opportunity for higher ambient ratings on fixtures -Assures fixtures will not overheat in retrofit applications
Same size as existing probe-start CWA ballasts	•Ballasts fit into existing fixture designs -Fixture manufacturers can go to market immediately -High retrofit potential for 70+ million metal halide and high pressure sodium fixtures currently in service
100°C Dry-film capacitor	•Small size/No exposed live parts -Simplifies fixture assembly and retrofits -100°C rating assures reliability
Faster run-up (2 min. vs. standard 4 min.)	•Minimizes stress on lamp electrodes -Extends lamp life
Quicker re-strike after momentary outage (3-4 min. vs standard 15-20 min.)	•Less time in the dark -Enhances safety/minimizes down time

Advance SuperCWA Ballast Specifications, with potted ignitor and capacitor, 60hz, min. starting temperature -40°F/-40°C

	Input Volts	Catalog† Number	**Discontinued** Catalog Number	Watts Input (Amps)	Max. Input Current (Amps)	Nom. Open Circuit Voltage	Fuse Rating	Dimensions FIG	Dimensions A	Dimensions B	Non-PCB Capacitor Mfd	Non-PCB Capacitor Min Volt	Non-PCB Capacitor Dry Film* Dia. (in)	Non-PCB Capacitor Dry Film* Ht. (in)	Total Weight (lbs.)	Ignitor Part Number	Ignitor Max. Dist. To Lamp	U.L. Bench Top Rise Code 1029_
	150 WATT LAMP, ANSI CODE M102/M142																	
	120/ 277/347	**71A54A3**	--	189	1.8/ .8/.6	187	5/ 2/2	1	2.7	4.0	22	240	1.50	3.75	8.5	LI501-J4	15	C/ B/A
	175 WATT LAMP, ANSI CODE M137																	
NEW	120/208/ 240/277	**71A5592**	71A5593	208	1.8/1.1 .9/.8	265	5/3/ 3/2	1	2.1	3.4	11.5	345	1.50	3.75	7.0	LI533-H4	2	D/D/ D/D
NEW	120/ 277/347	**71A55A3**	--	208	1.9 .8/.7	270	5/ 3/2	1	2.2	3.5	11.5	345	1.50	3.75	7.0	LI533-H4	2	C/ B/B
	200 WATT LAMP, ANSI CODE M136																	
	120/208/ 240/277	**71A5692**	71A5693	232	2.0/1.2/ 1.0/.9	240	6/4/ 3/3	1	2.5	3.6	15	330	1.50	3.75	8.0	LI533-H4	2	A/B/ A/A
	120/ 277/347	**71A56A2**	--	232	2.1/ .9/.7	235	6/ 3/2	1	2.5	3.6	15	330	1.50	3.75	8.0	LI533-H4	2	C/ A/A
	480/120T	**71A5642-T**	--	232	.5	240	2	1	2.5	3.6	15	330	1.50	3.75	8.0	LI533-H4	2	B
	250 WATT LAMP, ANSI CODE M138																	
	120/208/ 240/277	**71A5793**	--	288	2.5/1.5/ 1.3/1.1	265	8/5/ 5/3	2	1.2	3.0	18.5	300	1.50	3.75	9.0	LI533-H4	15	A/A/ A/B
NEW	120/ 277/347	**71A57A3**	--	290	2.5/ 1.1/.9	265	8/ 3/3	2	1.3	3.1	18.5	330	1.75	3.75	8.5	LI533-H4	15	A/ B/B
	320 WATT LAMP, ANSI CODE M132																	
	120/208/ 240/277	**71A5892**	71A5893	368	3.3/1.9/ 1.7/1.4	270	8/6/ 5/3	2	1.8	3.7	21	345	1.75	3.75	11.0	LI533-H4	2	B/B/ B/B
	120/ 277/347	**71A58A2**	71A58A3	368	3.3/ 1.4/1.1	270	8/ 4/3	2	1.8	3.7	21	345	1.75	3.75	11.0	LI533-H4	2	C/ C/C
	480/120T	**71A5842-T**	71A5843-T	368	.8	270	3	2	1.8	3.7	21	345	1.75	3.75	11.0	LI533-H4	2	D
NEW	127/220	**71A58H2**	--	365	3.0/1.7	270	8/6	2	1.8	3.7	21	345	1.75	3.75	11.0	LI533-H4	5	B/B
NEW	100/200	**71A58Y2**	--	368	3.7/1.9	267	10/5	2	1.8	3.7	21	345	1.75	3.75	11.0	LI533-H4	5	B/B
NEW	**50hz** 100/200	**71A58M2**	--	370	3.7/1.9	280	10/5	2	2.1	3.9	24	400	1.75	5.15	12.7	LI533-H4	2	A/A
NEW	**50hz** 120/ 220-240	**71A58N2**	71A58N3	365	3.1/ 1.6	280	10/ 5	2	2.1	3.8	24	400	1.75	5.15	12.5	LI533-H4	2	A/ A
	350 WATT LAMP, ANSI CODE M131																	
	120/208/ 240/277	**71A5993**	71A5992	400	3.4/2.0/ 1.7/1.5	270	10/7/ 5/5	2	1.8	3.7	22.5	345	1.75	3.75	11.0	LI533-H4	2	D/C/ C/C
	120/ 277/347	**71A59A3**	71A59A2	400	3.4/ 1.5/1.2	275	10/ 5/3	2	1.8	3.7	22.5	345	1.75	3.75	11.0	LI533-H4	2	D/ C/C
	480/120T	**71A5943-T**	71A5942-T	400	.9	275	3	2	1.8	3.7	22.5	345	1.75	3.75	11.0	LI533-H4	2	D
NEW	**50hz** 120/ 220-240	**71A59N3**	71A59N2	394	3.3/ 1.7	280	10/ 5	2	2.1	3.8	25.5	400	1.75	5.15	12.5	LI533-H4	2	C/ C
	400 WATT LAMP, ANSI CODE M135																	
NEW	120/208/ 240/277	**71A6092**	71A6093	452	3.8/2.2/ 1.9/1.7	265	10/7/ 5/5	2	1.8	3.7	26	330	1.75	3.75	11.0	LI533-H4	2	D/C/ D/D
NEW	120/ 277/347	**71A60A2**	71A60A3	450	3.8/ 1.7/1.4	270	10/ 5/4	2	1.8	3.7	26	330	1.75	3.75	11.0	LI533-H4	2	C/ D/D
NEW	480/120T	**71A6042-T**	71A6043-T	452	1.0	270	3	2	2.0	3.8	26	330	1.75	3.75	12.0	LI533-H4	2	D
	CWI 120/ 220/240	**71A61E6**	--	455	4.2/ 2.4/2.1	265	10/ 7/5	2	2.2	3.8	26	330	1.75	3.75	13.0	LI533-H4	2	E/ C/C
NEW	**50hz** 120/ 220-240	**71A60N2**	71A60N3	454	3.9/ 2.0	270	10/ 5	2	2.1	3.8	30	345	2.00	5.15	12.3	LI533-H4	2	C/ E
	450 WATT LAMP, ANSI CODE M144																	
NEW	120/208/ 240/277	**71A6393**	--	508	4.3/2.5/ 2.2/1.9	257	10/8/ 5/5	2	2.3	3.9	26.5	400	1.75	5.15	13.5	LI533-H4	5	C/C/ C/C
NEW	120/ 277/347	**71A63A3**	--	505	4.3/ 1.9/1.5	267	10/ 5/4	2	2.4	4.2	26.5	400	1.75	5.15	13.5	LI533-H4	5	D/ D/D
NEW	480/120T	**71A6343-T**	--	514	1.1	267	3	2	2.4	4.2	26.5	400	1.75	5.15	14.0	LI533-H4	5	D
	750 WATT LAMP, ANSI CODE M149																	
NEW	120/ 208/240	**71A64E2**	--	812	7.0/ 4.0/3.5	355	20/ 10/10	8	2.2	4.3	28.0	400	2.00	5.15	17.0	LI534-H5	2	D/ C/D
NEW	277/ 347/480	**71A64F2**	--	818	3.0/ 2.5/1.7	355	8/ 7/5	8	2.3	4.3	28.0	400	2.00	5.15	17.0	LI534-H5	2	E/ E/E
	1000 WATT LAMP, ANSI CODE M141																	
NEW	120/208/ 240/277	**71A6593**	--	1080	9.0/5.2 4.5/3.9	430	20/15/ 10/10	8	2.8	4.5	24	450*	1.75 OVAL	3.90	21.0	LI571-H5	25	D/B/ B/B
NEW	347/480/ 120T	**71A65F3-T**	--	1075	3.2/2.4	430	8/6	8	2.8	4.5	24	450*	1.75 OVAL	3.90	24.0	LI571-H5	25	D/D

***Capacitors for 1000W ballasts available as oil-filled only. All other ballsts available with dry film capacitors.**

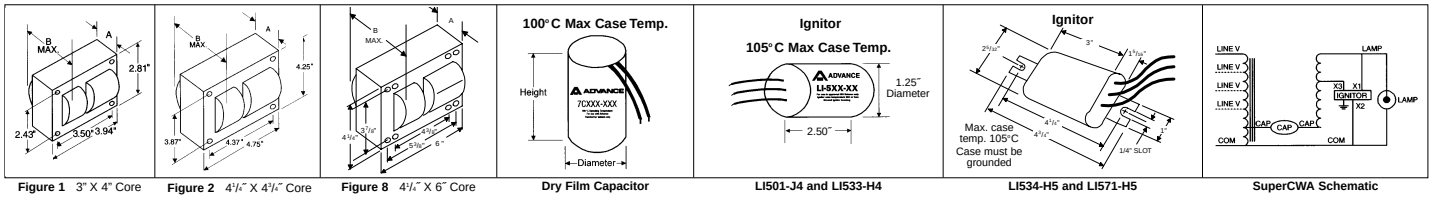


Figure 1 3" X 4" Core **Figure 2** 4¹/₄" X 4³/₄" Core **Figure 8** 4¹/₄" X 6" Core **Dry Film Capacitor** **LI501-J4 and LI533-H4** **LI534-H5 and LI571-H5** **SuperCWA Schematic**

† **Ordering information -** add proper suffix to catalog number; **-500D** includes core & coil with dry film capacitor; **-510D** includes core & coil with welded bracket and dry film capacitor
Notes: -T denotes 120 volt output tap for quartz stand-by lighting. **CWI = C**onstant **W**attage **I**solated, primary and secondary coils are electrically isolated. Required in Canada for 208v & 240v applications.

Specifications subject to change without notice.
Printed in U.S.A. © 2000 Advance Transformer Co.
Form No. HI-4000-R01

O'HARE INTERNATIONAL CENTER
10275 WEST HIGGINS ROAD
ROSEMONT, ILLINOIS 60018
TELEPHONE: (800) 322-2086 FAX: (888) 423-1882
CUSTOMER SUPPORT/TECHNICAL SERVICE: (800) 372-3331
www.advancetransformer.com