

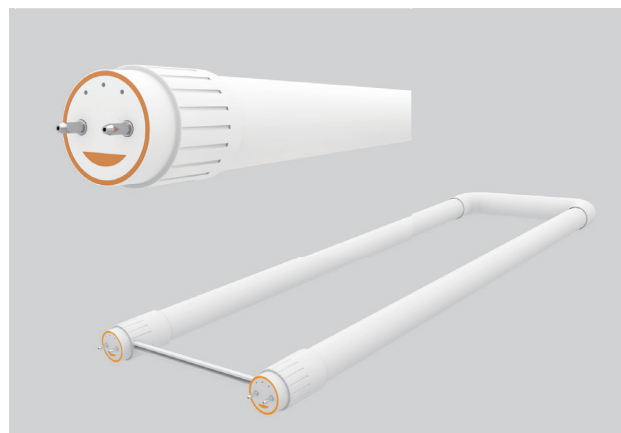


T8 DIR FAMILY

MODEL

Model: 8T8/2F/xxx/DIR	8T8/2F/xxx/DIR/R
8T8/2F/xxx/DIR/RC	
8T8/3F/xxx/DIR	8T8/3F/xxx/DIR/R
8T8/3F/xxx/DIR/RC	
10.5T8/4F/xxx/DIR	10.5T8/4F/xxx/DIR/R
10.5T8/4F/xxx/DIR/RC	10.5T8/4F/xxx/DIR/RD
13T8/4F/xxx/DIR	13T8/4F/xxx/DIR/R
13T8/4F/xxx/DIR/RC	
16T8U6/xxx/DIR	16T8U6/xxx/DIR/R

Where xxx means 824-965 which indicates CRI and color temperature



ELECTRONIC BALLAST COMPATIBILITY

Model: 8T8/2F/xxx/DIR	8T8/2F/xxx/DIR/R	8T8/2F/xxx/DIR/RC
8T8/3F/xxx/DIR	8T8/3F/xxx/DIR/R	8T8/3F/xxx/DIR/RC

Brand	Model	Type	Compatibility			
			(Ballasts are compatible with 120V & 277V unless otherwise noted)			
			1 lamp	2 lamps	3 lamps	4 lamps
Philips - Advance	ICN-1P32-N	IS	OK	-	-	-
Philips - Advance	ICN-2P32-N	IS	OK	OK	-	-
Philips - Advance	ICN-3P32-N	IS	OK w/Noise	OK w/Noise	OK w/Noise	-
Philips - Advance	ICN-4P32-N	IS	OK	OK	OK	OK
Philips - Advance	IOPA-1P32-N	IS	OK	-	-	-
Philips - Advance	IOP-2P32-LW-N	IS	OK	OK	-	-
Philips - Advance	IOP-3P32-N	IS	OK	OK	OK	-
Philips - Advance	IOPA-4P32-N	IS	OK	OK	OK	OK
Philips - Advance	IOPA-1P32-LW-N	IS	OK	-	-	-
Philips - Advance	IOPA-2P32-LW-N	IS	OK	OK	-	-
Philips - Advance	IOP-4P32-LW-N	IS	OK	OK	OK	OK
Philips - Advance	IOPA-4P32-SC	IS	277V only	277V only	277V only	277V only
Philips - Advance	IOP-3P32-HL-N	IS	OK	OK	OK	-
Philips - Advance	ICN-4P32-SC	IS	OK	OK	OK	OK
Philips - Advance	ICN-132-MC	IS	OK	-	-	-
Philips - Advance	VEZ-132-SC	PS	OK	-	-	-
Philips - Advance	IZT-132-SC	PS	OK	-	-	-
Philips - Advance	IZT-2PSP32-SC	PS	OK	OK	-	-
Philips - Advance	REZ-132-SC	PS	OK	-	-	-
Philips - Advance	VEZ-2S32-SC	PS	-	OK	-	-
Philips - Advance	REZ-2P32-SC	PS	-	OK	-	-
Philips - Advance	REL-2P32-SC	IS	X	X	X	X
Philips - Advance	REL-2P32-RH-TP	IS	X	X	X	X



T8 DIR FAMILY

ELECTRONIC BALLAST COMPATIBILITY

Brand	Model	Type	Compatibility			
			(Ballasts are compatible with 120V & 277V unless otherwise noted)			
			1 lamp	2 lamps	3 lamps	4 lamps
GE - Ultramax	GE132MAXP-N/ULTRA	IS	-	-	-	-
GE - Ultramax	GE232MAX-L/ULTRA	IS	OK	OK	-	-
GE - Ultramax	GE232MAX-N/ULTRA	IS	OK	OK	-	-
GE - Ultramax	GE232MAX-H/ULTRA	IS	OK	OK	-	-
GE - Ultramax	GE232MAXP-H/ULTRA	IS	OK	OK	-	-
GE - Ultramax	GE232MAXP-N/ULTRA	IS	OK	OK	-	-
GE - Ultramax	GE332MAX-N/ULTRA	IS	OK	OK	OK	-
GE - Ultramax	GE332MAX-H/ULTRA	IS	OK	OK	OK	-
GE - Ultramax	GE332MAXP-L/ULTRA	IS	OK	OK	OK	-
GE - Ultramax	GE332MAXP-N/ULTRA	IS	OK	OK	OK	-
GE - Ultramax	GE332MAXP-H/ULTRA	IS	X	X	X	X
GE - Ultramax	GE432MAX-L/ULTRA	IS	OK	OK	OK	OK
GE - Ultramax	GE432MAX-N/ULTRA	IS	OK	OK	OK	OK
GE - Ultramax	GE432MAXP-L/ULTRA	IS	OK	OK	OK	OK
GE - Ultramax	GE432MAXP-H/ULTRA	IS	X	X	X	X
GE - Ultramax	GE432MAX-G-N	IS	OK	OK	OK	OK
GE - Proline	GE-232-MV-N	IS	OK	OK	-	-
GE - Proline	GE-332-MV-N	IS	OK	OK	OK	-
GE - Ultrastart	GE-232-MV-PS-N	PS	OK	OK	-	-
GE - Ultrastartt	GE-232-MV-PS-H	PS	OK	OK	-	-
Sylvania	QHE 2X32T8/UNV DIM-TC	PS	-	OK	-	-
Sylvania	QHE4X32T8/UNV PSN-SC	PS	OK	OK	OK	OK
Sylvania	QHE 2X32T8/UNV ISL-SC	IS	OK	OK	-	-
Sylvania	QHE 4X32T8/UNV ISL-SC	IS	OK	OK	OK	OK
Sylvania	QHE 2x32T8/UNV ISN-SC	IS	OK	OK	-	-
Sylvania	QHE 4x32T8/UNV ISN-SC	IS	-	-	OK	OK
Sylvania	QTP3X32T8/UNV ISN-SC	IS	OK	OK	OK	-
Sylvania	QTP 4X32T8/UNV ISN-SC	IS	OK	OK	OK	OK
Espen	VE2P32MVHIPHE	IS	OK	OK	-	-
Espen	VE2P32MVHIPE	IS	OK	OK	-	-
Espen	VE3P32MVHIPE	IS	OK	OK	OK	-
Espen	VE4P32MVHIPE	IS	OK	OK	OK	OK
Espen	VE232MVHIPHE	IS	OK	OK	-	-



T8 DIR FAMILY

ELECTRONIC BALLAST COMPATIBILITY

Brand	Model	Type	Compatibility			
			(Ballasts are compatible with 120V & 277V unless otherwise noted)			
			1 lamp	2 lamps	3 lamps	4 lamps
Universal	B132IUNVHP-N	IS	OK	-	-	-
Universal	B232IUNVHP-N	IS	OK	OK	-	-
Universal	B232PUNVHE-B	PS	OK	OK	-	-
Universal	B232PUS50-A	PS	X	X	X	X
Universal	B332IUNVHP-A	IS	OK	OK	OK	-
Universal	B432IUNVHP-A	IS	OK	OK	OK	OK
Powermaster	PM-2X32T8-UNV-IS-L	IS	OK	OK	-	-
Powermaster	PM-3X32T8-UNV-IS-H	IS	277V only	277V only	277V only	-
Powermaster	PM-4X32T8-UNV-IS-L	IS	277V only	277V only	277V only	277V only
Plusrite	BAF332IS/MV	IS	OK	OK	OK	-
Plusrite	BAF232IS/MV/H	IS	OK	OK	-	-
Plusrite	BAF232IS/MV	IS	OK	OK	-	-
Premium	BB-T8/UNH-2X32	IS	-	OK	-	-
Premium	BB-T8/UVH-4X32	IS	277V only	277V only	277V only	277V only
Howard	EPL3/32IS/MV/SC/HE	IS	OK	OK	OK	-
Howard	EP3/32IS/MV/MC/HE	IS	OK	OK	OK	-
Fulham	WHSG3-UNV-T8-IS	IS	OK	OK	OK	-
Robertson	ISU232T8120	IS	120V only	120V only	-	-
Sola	E-758-F-232-SC	IS	X	X	-	-
Sunpark	U-2/32ISE	IS	OK	OK	-	-
Tcp	E4P32PSUNVE	PS	OK	OK	OK	OK

OK - Fully Compatible
X - Not Compatible

GREEN CREATIVE has provided this ballast compatibility chart for guidance when selecting a ballast and lamp combination. Lamps were tested for compatibility with the above listed Instant Start (IS) and Programmed Start (PS) ballasts. Ballasts that do not appear on the chart might still be compatible but have not been tested. All testing has been performed with a stable main supply. The quality of the local main, existing installation and wiring, as well as different manufacturer versions of the above ballasts may affect lamp performance. Since no assurance can be provided regarding these factors, it is a general recommendation to perform a test on-site prior to installing the LED lamps.



T8 DIR FAMILY

ELECTRONIC BALLAST COMPATIBILITY

Model: 10.5T8/4F/xxx/DIR 10.5T8/4F/xxx/DIR/R 10.5T8/4F/xxx/DIR/RC 10.5T8/4F/xxx/DIR/RD
 13T8/4F/xxx/DIR 13T8/4F/xxx/DIR/R 13T8/4F/xxx/DIR/RC

Brand	Model	Type	Compatibility			
			(Ballasts are compatible with 120V & 277V unless otherwise noted)			
			1 lamp	2 lamps	3 lamps	4 lamps
Philips - Advance	ICN-1P32-N	IS	OK	-	-	-
Philips - Advance	ICN-2P32-N	IS	OK	OK	-	-
Philips - Advance	ICN-3P32-N	IS	OK w/Noise	OK w/Noise	OK w/Noise	-
Philips - Advance	ICN-4P32-N	IS	OK	OK	OK	OK
Philips - Advance	IOPA-1P32-N	IS	OK	-	-	-
Philips - Advance	IOP-2P32-LW-N	IS	OK	OK	-	-
Philips - Advance	IOP-3P32-N	IS	OK	OK	OK	-
Philips - Advance	IOPA-4P32-N	IS	OK	OK	OK	OK
Philips - Advance	IOPA-1P32-LW-N	IS	OK	-	-	-
Philips - Advance	IOPA-2P32-LW-N	IS	OK	OK	-	-
Philips - Advance	IOP-4P32-LW-N	IS	OK	OK	OK	OK
Philips - Advance	IOPA-4P32-SC	IS	277V only	277V only	277V only	277V only
Philips - Advance	IOP-3P32-HL-N	IS	OK	OK	OK	-
Philips - Advance	ICN-4P32-SC	IS	OK	OK	OK	OK
Philips - Advance	ICN-132-MC	IS	OK	-	-	-
Philips - Advance	VEZ-132-SC	PS	OK	-	-	-
Philips - Advance	IZT-132-SC	PS	OK	-	-	-
Philips - Advance	IZT-2PSP32-SC	PS	OK	OK	-	-
Philips - Advance	REZ-132-SC	PS	OK	-	-	-
Philips - Advance	VEZ-2S32-SC	PS	-	OK	-	-
Philips - Advance	REZ-2P32-SC	PS	-	OK	-	-
Philips - Advance	REL-2P32-SC	IS	X	X	X	X
Philips - Advance	REL-2P32-RH-TP	IS	X	X	X	X
GE - Ultramax	GE132MAXP-N/ULTRA	IS	-	-	-	-
GE - Ultramax	GE232MAX-L/ULTRA	IS	OK	OK	-	-
GE - Ultramax	GE232MAX-N/ULTRA	IS	OK	OK	-	-
GE - Ultramax	GE232MAX-H/ULTRA	IS	OK	OK	-	-
GE - Ultramax	GE232MAXP-H/ULTRA	IS	OK	OK	-	-
GE - Ultramax	GE232MAXP-N/ULTRA	IS	OK	OK	-	-
GE - Ultramax	GE332MAX-N/ULTRA	IS	OK	OK	OK	-
GE - Ultramax	GE332MAX-H/ULTRA	IS	OK	OK	OK	-
GE - Ultramax	GE332MAXP-L/ULTRA	IS	OK	OK	OK	-
GE - Ultramax	GE332MAXP-N/ULTRA	IS	OK	OK	OK	-



T8 DIR FAMILY

ELECTRONIC BALLAST COMPATIBILITY

Brand	Model	Type	Compatibility			
			(Ballasts are compatible with 120V & 277V unless otherwise noted)			
			1 lamp	2 lamps	3 lamps	4 lamps
GE - Ultramax	GE332MAXP-H/ULTRA	IS	X	X	X	X
GE - Ultramax	GE432MAX-L/ULTRA	IS	OK	OK	OK	OK
GE - Ultramax	GE432MAX-N/ULTRA	IS	OK	OK	OK	OK
GE - Ultramax	GE432MAXP-L/ULTRA	IS	OK	OK	OK	OK
GE - Ultramax	GE432MAXP-H/ULTRA	IS	X	X	X	X
GE - Ultramax	GE632MAX-H90-S60	IS	OK	OK	OK	OK
GE - Ultramax	GE432MAX-G-N	IS	OK	OK	OK	OK
GE - Proline	GE-232-MV-N	IS	OK	OK	-	-
GE - Proline	GE-332-MV-N	IS	OK	OK	OK	-
GE - Ultrastart	GE-232-MV-PS-N	PS	OK	OK	-	-
GE - Ultrastart	GE-232-MV-PS-H	PS	OK	OK	-	-
Sylvania	QHE 2X32T8/UNV DIM-TC	PS	-	OK	-	-
Sylvania	QHE4X32T8/UNV PSN-SC	PS	OK	OK	OK	OK
Sylvania	QHE 2X32T8/UNV ISL-SC	IS	OK	OK	-	-
Sylvania	QHE 4X32T8/UNV ISL-SC	IS	OK	OK	OK	OK
Sylvania	QHE 2x32T8/UNV ISN-SC	IS	OK	OK	-	-
Sylvania	QHE 4x32T8/UNV ISN-SC	IS	-	-	OK	OK
Sylvania	QTP2X32T8/UNV ISL-SC	IS	OK	OK	-	-
Sylvania	QTP2X32T8/UNV ISN-SC	IS	OK	OK	-	-
Sylvania	QTP3X32T8/UNV ISN-SC	IS	OK	OK	OK	-
Sylvania	QTP 4X32T8/UNV ISN-SC	IS	OK	OK	OK	OK
Sylvania	QTP 3X32T8/UNV PSN-SC	PS	-	-	OK	-
Sylvania	QTP 2X32T8/UNV PSN-TC	PS	-	OK	-	-
Sylvania	QHE 2X32T8-UNV PSN-MC	PS	OK	OK	OK	OK
Espen	VE2P32MVHIPHE	IS	OK	OK	-	-
Espen	VE2P32MVHIPE	IS	OK	OK	-	-
Espen	VE3P32MVHIPE	IS	OK	OK	OK	-
Espen	VE4P32MVHIPE	IS	OK	OK	OK	OK
Espen	VE232MVHIPHE	IS	OK	OK	-	-
Universal	B132IUNVHP-N	IS	OK	-	-	-
Universal	B232IUNVHP-N	IS	OK	OK	-	-
Universal	B232PUNVHE-B	PS	OK	OK	-	-
Universal	B232PUS50-A	PS	X	X	X	X
Universal	B332IUNVHP-A	IS	OK	OK	OK	-
Universal	B432IUNVHP-A	IS	OK	OK	OK	OK



T8 DIR FAMILY

ELECTRONIC BALLAST COMPATIBILITY

Brand	Model	Type	Compatibility			
			(Ballasts are compatible with 120V & 277V unless otherwise noted)			
			1 lamp	2 lamps	3 lamps	4 lamps
Powermaster	PM-2X32T8-UNV-IS-L	IS	OK	OK	-	-
Powermaster	PM-3X32T8-UNV-IS-H	IS	277V only	277V only	277V only	-
Powermaster	PM-4X32T8-UNV-IS-L	IS	277V only	277V only	277V only	277V only
Plusrite	BAF332IS/MV	IS	OK	OK	OK	-
Plusrite	BAF232IS/MV/H	IS	OK	OK	-	-
Plusrite	BAF232IS/MV	IS	OK	OK	-	-
Premium	BB-T8/UNH-2X32	IS	-	OK	-	-
Premium	BB-T8/UVH-4X32	IS	277V only	277V only	277V only	277V only
Howard	EPL3/32IS/MV/SC/HE	IS	OK	OK	OK	-
Howard	EP3/32IS/MV/MC/HE	IS	OK	OK	OK	-
Fulham	WHSG3-UNV-T8-IS	IS	OK	OK	OK	-
Robertson	ISU232T8120	IS	120V only	120V only	-	-
Sola	E-758-F-232-SC	IS	X	X	-	-
Sunpark	U-2/32ISE	IS	OK	OK	-	-
Tcp	E4P32PSUNVE	PS	OK	OK	OK	OK

OK - Fully Compatible
X - Not Compatible

GREEN CREATIVE has provided this ballast compatibility chart for guidance when selecting a ballast and lamp combination. Lamps were tested for compatibility with the above listed Instant Start (IS) and Programmed Start (PS) ballasts. Ballasts that do not appear on the chart might still be compatible but have not been tested. All testing has been performed with a stable main supply. The quality of the local main, existing installation and wiring, as well as different manufacturer versions of the above ballasts may affect lamp performance. Since no assurance can be provided regarding these factors, it is a general recommendation to perform a test on-site prior to installing the LED lamps.



T8 DIR FAMILY

ELECTRONIC BALLAST COMPATIBILITY

Model: 16T8U6/xxx/DIR 16T8U6/xxx/DIR/R

Brand	Model	Type	Compatibility			
			(Ballasts are compatible with 120V & 277V unless otherwise noted)			
			1 lamp	2 lamps	3 lamps	4 lamps
Philips - Advance	ICN-1P32-N	IS	OK	-	-	-
Philips - Advance	ICN-2P32-N	IS	OK	OK	-	-
Philips - Advance	ICN-3P32-N	IS	OK	OK	OK	-
Philips - Advance	ICN-4P32-N	IS	OK	OK	OK	OK
Philips - Advance	IOPA-1P32-N	IS	OK	-	-	-
Philips - Advance	IOP-2P32-LW-N	IS	OK	OK	-	-
Philips - Advance	IOP-3P32-N	IS	OK	OK	OK	-
Philips - Advance	IOPA-4P32-N	IS	OK	OK	OK	OK
Philips - Advance	IOPA-1P32-LW-N	IS	OK	-	-	-
Philips - Advance	IOPA-2P32-LW-N	IS	OK	OK	-	-
Philips - Advance	IOP-4P32-LW-N	IS	OK	OK	OK	OK
Philips - Advance	IOPA-4P32-SC	IS	277V only	277V only	277V only	277V only
Philips - Advance	IOP-3P32-HL-N	IS	OK	OK	OK	-
Philips - Advance	ICN-4P32-SC	IS	OK	OK	OK	OK
Philips - Advance	ICN-132-MC	IS	OK	-	-	-
Philips - Advance	VEZ-132-SC	PS	OK	-	-	-
Philips - Advance	IZT-132-SC	PS	OK	-	-	-
Philips - Advance	IZT-2PSP32-SC	PS	OK	OK	-	-
Philips - Advance	REZ-132-SC	PS	OK	-	-	-
Philips - Advance	VEZ-2S32-SC	PS	-	OK	-	-
Philips - Advance	REZ-2P32-SC	PS	-	OK	-	-
Philips - Advance	REL-2P32-SC	IS	X	X	X	X
Philips - Advance	REL-2P32-RH-TP	IS	X	X	X	X
GE - Ultramax	GE132MAXP-N/ULTRA	IS	OK	-	-	-
GE - Ultramax	GE232MAX-L/ULTRA	IS	OK	OK	-	-
GE - Ultramax	GE232MAX-N/ULTRA	IS	OK	OK	-	-
GE - Ultramax	GE232MAX-H/ULTRA	IS	OK	OK	-	-
GE - Ultramax	GE232MAXP-H/ULTRA	IS	OK	OK	-	-
GE - Ultramax	GE232MAXP-N/ULTRA	IS	OK	OK	-	-
GE - Ultramax	GE332MAX-N/ULTRA	IS	OK	OK	OK	-
GE - Ultramax	GE332MAX-H/ULTRA	IS	-	OK	OK	-
GE - Ultramax	GE332MAXP-L/ULTRA	IS	OK	OK	OK	-
GE - Ultramax	GE332MAXP-N/ULTRA	IS	OK	OK	OK	-



T8 DIR FAMILY

ELECTRONIC BALLAST COMPATIBILITY

Brand	Model	Type	Compatibility			
			(Ballasts are compatible with 120V & 277V unless otherwise noted)			
			1 lamp	2 lamps	3 lamps	4 lamps
GE - Ultramax	GE332MAXP-H/ULTRA	IS	X	X	X	X
GE - Ultramax	GE432MAX-L/ULTRA	IS	OK	OK	OK	OK
GE - Ultramax	GE432MAX-N/ULTRA	IS	OK	OK	OK	OK
GE - Ultramax	GE432MAXP-L/ULTRA	IS	OK	OK	OK	OK
GE - Ultramax	GE432MAXP-H/ULTRA	IS	X	X	X	X
GE - Ultramax	GE432MAX-G-N	IS	OK	OK	OK	OK
GE - Proline	GE-232-MV-N	IS	OK	OK	-	-
GE - Proline	GE-332-MV-N	IS	OK	OK	OK	-
GE - Ultrastart	GE-232-MV-PS-N	PS	OK	OK	-	-
GE - Ultrastart	GE-232-MV-PS-H	PS	OK	OK	-	-
Sylvania	QHE 2X32T8/UNV DIM-TC	PS	-	OK	-	-
Sylvania	QHE4X32T8/UNV PSN-SC	PS	OK	OK	OK	OK
Sylvania	QHE 2X32T8/UNV ISL-SC	IS	OK	OK	-	-
Sylvania	QHE 4X32T8/UNV ISL-SC	IS	OK	OK	OK	OK
Sylvania	QTP3X32T8/UNV ISN-SC	IS	OK	OK	OK	-
Sylvania	QTP 4X32T8/UNV ISN-SC	IS	OK	OK	OK	OK
Espen	VE2P32MVHIPHE	IS	OK	OK	-	-
Espen	VE2P32MVHIPE	IS	OK	OK	-	-
Espen	VE3P32MVHIPE	IS	OK	OK	OK	-
Espen	VE4P32MVHIPE	IS	OK	OK	OK	OK
Espen	VE232MVHIPHE	IS	OK	OK	-	-
Universal	B132IUNVHP-N	IS	OK	-	-	-
Universal	B232IUNVHP-N	IS	OK	OK	-	-
Universal	B232PUNVHE-B	PS	OK	OK	-	-
Universal	B232PUS50-A	PS	X	X	X	X
Universal	B332IUNVHP-A	IS	OK	OK	OK	-
Universal	B432IUNVHP-A	IS	OK	OK	OK	OK
Powermaster	PM-2X32T8-UNV-IS-L	IS	OK	OK	-	-
Powermaster	PM-3X32T8-UNV-IS-H	IS	277V only	277V only	277V only	-
Powermaster	PM-4X32T8-UNV-IS-L	IS	277V only	277V only	277V only	277V only
Plusrite	BAF332IS/MV	IS	OK	OK	OK	-
Plusrite	BAF232IS/MV/H	IS	OK	OK	-	-
Plusrite	BAF232IS/MV	IS	OK	OK	-	-
Premium	BB-T8/UNH-2X32	IS	-	OK	-	-
Premium	BB-T8/UVH-4X32	IS	277V only	277V only	277V only	277V only



T8 DIR FAMILY

ELECTRONIC BALLAST COMPATIBILITY

Brand	Model	Type	Compatibility			
			(Ballasts are compatible with 120V & 277V unless otherwise noted)			
			1 lamp	2 lamps	3 lamps	4 lamps
Howard	EPL3/32IS/MV/SC/HE	IS	OK	OK	OK	-
Howard	EP3/32IS/MV/MC/HE	IS	OK	OK	OK	-
Fulham	WHSG3-UNV-T8-IS	IS	OK	OK	OK	-
Robertson	ISU232T8120	IS	277V only	277V only	-	-
Sola	E-758-F-232-SC	IS	X	X	-	-
Sunpark	U-2/32ISE	IS	OK	OK	-	-
Tcp	E4P32PSUNVE	PS	OK	OK	OK	OK

OK- Fully Compatible
X - Not Compatible

GREEN CREATIVE has provided this ballast compatibility chart for guidance when selecting a ballast and lamp combination. Lamps were tested for compatibility with the above listed Instant Start (IS) and Programmed Start (PS) ballasts. Ballasts that do not appear on the chart might still be compatible but have not been tested. All testing has been performed with a stable main supply. The quality of the local main, existing installation and wiring, as well as different manufacturer versions of the above ballasts may affect lamp performance. Since no assurance can be provided regarding these factors, it is a general recommendation to perform a test on-site prior to installing the LED lamps.