



## Ballast and Battery Backup Unit Compatibilities for Uni-Fit Tube Lamps

This list provides the known and tested compatible ballasts for RVLT Uni-Fit LED T8 and T5 Tube Lamps. Compatible battery backup units for Uni-Fit T8 Tube Lamps are also provided. Please see all notes and information after each table and at the end of this document.

### Ballast Compatibilities for Uni-Fit T8 & U-Bent Tube Lamps (Subject to Change)

Ballast Model No.	Start Type	Power Level	Ballast Factor	T8 Uni-Fit Compatibility <small>Applicable SKU Families: 202220-01X, 203220-01X, 204220-01X, 204221-01X, 204222-01X</small>	U-Bent Uni-Fit Compatibility <small>Applicable SKU Family: 207280-11X</small>
<b>Accupro</b>					
AP-RC-232IP-120-1	ISE	Normal	0.88	✓	✓
AP-332IP-UNV	ISE	Normal	0.88	✓	N/A
AP-RC-432IP-120-1	ISE	Normal	0.88	✓	N/A
AK-RC-432IP-120	ISE	Normal	0.88	✓	N/A
<b>Fulham</b>					
WHS3-UNV-T8-IS	ISE	Normal +	1.00	✓	N/A
<b>General Electric</b>					
132MAX-L/ULTRA	ISE	Low	0.77	✓	✓
132MAX-N/ULTRA	ISE	Normal	0.88	✓	✓
132-MV-N	ISE	Normal	0.88	✓	✓
232MAX-L/ULTRA	ISE	Low	0.77	✓	✓
232MAX-N/ULTRA	ISE	Normal	0.88	✓	✓
232MAXP-N+	ISE	Normal +	1.00	✓	✓
232MAX-H/ULTRA	ISE	High	1.18	✓	✓
232MAXP-H/ULTRA	ISE	High	1.18	✓	✓
232Max-G-N	ISE	Normal	0.88	✓	✓
332 MV-H	ISE	High	1.18	✓	✓
GE-132-MV-PS-L	PSE <sup>2</sup>	Low	0.77	✓	N/A
GE-132-MV-PS-N	PSE <sup>2</sup>	Normal	0.88	✓	N/A
GE132-MVPS-H	PSE <sup>2</sup>	High	1.18	✓	N/A
GE-232-MVPS-XL	PSE <sup>2</sup>	Extra Low	0.71	✓	N/A
GE-232-MV-PS-L	PSE <sup>2</sup>	Low	0.77	✓	N/A
GE332-MVPS-L	PSE <sup>2</sup>	Low	0.77	✓	N/A
GE332-MVPS-N	PSE <sup>2</sup>	Normal	0.88	✓	N/A
GE432-MVPS-L	PSE <sup>2</sup>	Low	0.77	✓	N/A
232MVPSN-V03 <sup>1</sup>	PSE <sup>2</sup>	Normal	0.88	✓	N/A
432MVPSN-V03W <sup>1</sup>	PSE <sup>2</sup>	Normal	0.88	✓	N/A
<b>Howard</b>					
EP2/32IS/MV/MC/HE	ISE	Normal	0.89	✓	✓
EPH3/32IS/MV/MC/HE	ISE	High	1.18	✓	N/A
<b>Keystone</b>					
KTEB-232-UV-IS-N-P	ISE	Normal	0.88	✓	N/A
KTEB-332-UV-IS-N-P	ISE	Normal	0.88	✓	N/A
KTEB-432RIS-1-TP/INB	ISE	Normal	0.88	✓	N/A
<b>Osram/Sylvania</b>					
QHE 1x32T8/UNV ISL-SC	ISE	Low	0.77	✓	✓
QHE 1x32T8/UNV ISN-SC	ISE	Normal	0.87	✓	✓
QHE 2x32T8/UNV ISL-SC	ISE	Low	0.77	✓	✓
QHE 2x32T8/UNV ISN-SC	ISE	Normal	0.87	✓	✓
QHE 2x32T8/UNV ISH-SC	ISE	High	1.20	✓	✓
QTP 2x32T8/UNV ISN-SC	ISE	Normal	0.87	✓	✓
QHE 3x32T8/UNV ISL-SC	ISE	Low	0.77	✓	N/A
QHE 3x32T8/UNV ISN-SC	ISE	Normal	0.87	✓	N/A
QHE 3x32T8/UNV ISH-SC	ISE	High	1.20	✓	N/A
QTP 3x32T8/UNV ISN-SC	ISE	Normal	0.87	✓	N/A
QHE 4x32T8/UNV ISL-SC	ISE	Low	0.77	✓	N/A
QHE 4x32T8/UNV ISN-SC	ISE	Normal	0.87	✓	N/A



Ballast Model No.	Start Type	Power Level	Ballast Factor	T8 Uni-Fit Compatibility	U-Bent Uni-Fit Compatibility
				<i>Applicable SKU Families: 202220-01X, 203220-01X, 204220-01X, 204221-01X, 204222-01X</i>	<i>Applicable SKU Family: 207280-11X</i>
QHE 1x32T8/UNV PSX-MC	PSE <sup>2</sup>	Extra Low	0.72	✓	N/A
QHE 1x32T8/UNV PSN-MC	PSE <sup>2</sup>	Normal	0.87	✓	N/A
QHE 2x32T8/UNV PSX-MC	PSE <sup>2</sup>	Extra Low	0.72	✓	N/A
QHE 2x32T8/UNV PSN-MC	PSE <sup>2</sup>	Normal	0.87	✓	N/A
QHE 2x32T8/UNV PSH-HT	PSE <sup>2</sup>	High	1.20	✓	N/A
QHE 3x32T8/UNV PSN-SC	PSE <sup>2</sup>	Normal	0.87	✓	N/A
QHE 4x32T8/UNV PSX-SC	PSE <sup>2</sup>	Extra Low	0.71	✓	N/A
QHE 4x32T8/UNV PSN-SC	PSE <sup>2</sup>	Normal	0.87	✓	N/A
QHE 4x32T8/UNV PSN-HT	PSE <sup>2</sup>	Normal	0.87	✓	N/A
QTP 2x32T8/UNV DIM-TC <sup>1</sup>	PSE <sup>2</sup>	Normal	0.87	✓	N/A
QTP 3X32T8/UNV DIM-TCL <sup>1</sup>	PSE <sup>2</sup>	Low	0.77	✓	N/A
<b>Philips Advance</b>					
ICN-1P32-N <sup>3</sup>	ISE	Normal	0.90	✓	✓
IOPA-1P32-N <sup>3</sup>	ISE	Normal	0.90	✓	✓
ICN-2P32-N <sup>3</sup>	ISE	Normal	0.90	✓	✓
IOPA-2P32-LW-N <sup>3</sup>	ISE	Low	0.77	✓	✓
IOP-4P32-HL-SC <sup>3</sup>	ISE	High	1.18	✓	N/A
REZ-2S32-SC <sup>1,3</sup>	PSE <sup>2</sup>	Normal	0.90	✓	N/A
<b>Universal</b>					
B132IUNVHP-N	ISE	Normal	0.88	✓	✓
B232IUNVHP-N	ISE	Normal	0.88	✓	✓
B332IUNVHP-A	ISE	Normal	0.88	✓	N/A
B232PUNVHE-B	PSE <sup>2</sup>	Normal	0.88	✓	N/A

**NOTES:**

ISE = Instant-Start Electronic Ballast  
PSE = Programmed-Start Electronic Ballast  
✓ = Tested and Compatible  
N/A = Not Applicable

<sup>1</sup> Dimmable ballast product: special dimmers, such as "0-10V" or "Mk.10 Powerline" units may be required for proper functionality. It is the end user's responsibility to determine the correct dimmer type for use with their particular ballast. As always, RVLT products should be installed in their actual intended fixture/area for final verification of operation and performance.

<sup>2</sup> Please note that programmed-start electronic ballasts are inherently less predictable than their instant-start counterparts. As such, compatibility in RVLT's in-house testing does not guarantee compatibility in the end user's application. These ballast listings are intended only as recommendations and do not guarantee reliability or longevity. Programmed-start electronic ballasts are not recognized or recommended by DesignLights Consortium (DLC). As always, RVLT products should be installed in their actual intended fixture/area for final verification of operation and performance.

<sup>3</sup> If using this ballast, you may experience a slight buzzing/humming on start-up. As always, RVLT products should be installed in their actual intended fixture/area for final verification of operation and performance.

Several factors can adversely affect actual ballast performance, including ballast condition, wiring/socket condition, power supply instability, power switch type, installation situation, ambient temperature, and vibration. The quality of the main power supplied to the region/facility/room/area, existing wiring and installation, and varying production versions of the above listed ballasts may affect ballast/lamp performance. As always, RVLT products should be installed in their actual intended fixture/area for final verification and approval of operation and performance.

When checking ballasts on this compatibility list, ensure that the EXACT model number on the ballast matches the listed Ballast Model No. **EXACTLY**. A single different letter or digit can signify completely different functionality and compatibility. The presence of a ballast in these tables is not a guarantee or warranty of the compatibility of the LED lamp/luminaire in any particular installation. Incompatibility of ballasts not listed in these tables should not be assumed. If an intended ballast is not listed in the tables above, contact your RVLT representative to request specific ballast compatibility testing.

Please refer to the ballast manufacturer's specifications and installation instructions for additional information.

Please refer to the "Important Pre-Installation and Post-Installation Notes for All RVLT Uni-Fit Products" section below for important additional information about system safety and performance.

**TESTING NOTE:**

RVLT's in-house compatibility testing is conducted in a controlled laboratory environment utilizing basic on/off switching and 24 - 72 hour longevity tests. During this time we collect electrical and thermal measurements to determine the overall stress on the ballast and on our tube lamps. From these data, we determine whether the ballast-lamp relationship is efficient, reliable, and safe. Several factors can adversely affect actual ballast performance, including ballast condition, wiring/socket condition, power supply instability, power switch type, installation situation, ambient temperature, and vibration.



## Recommended Battery Backup Unit for Uni-Fit Linear T8 Tube Lamps

(Subject to Change)

In order to use RVLT Uni-Fit Tube Lamps in an existing emergency lighting fixture, RVLT recommends using one of the battery backup units listed in the table below, which will keep one (1) tube lit for the required 90 minutes per NFPA 70 NEC code requirements.

Battery Backup Unit Model No.	UL-Listed Install Type	Initial Lumen Output <sup>1</sup> (Fluorescent)	Illumination Time <sup>2</sup>	Battery Type	T8 Uni-Fit Compatibility <sup>3</sup> <small>Applicable SKU Families: 202220-01X, 203220-01X, 204220-01X, 204221-01X, 204222-01X</small>
<b>Philips Bodine</b>					
Bodine B50	Factory or Field	1,600 Lumens	90 Minutes	Nickel-Cadmium	✓
<b>Fulham</b>					
Firehorse FH5-DUAL-1400L	Factory or Field	1,400 Lumens	90 Minutes	Nickel-Cadmium	✓

**NOTES:**

✓ = Tested and Compatible

<sup>1</sup> - Battery manufacturer initial lumen output specification when used with fluorescent tubes on battery power. RVLT Uni-Fit Tube Lamp will be powered at full brightness, so results will vary from battery manufacturer specifications. See RVLT Uni-Fit Tube Lamp spec sheet for light output and other tube lamp performance information.

<sup>2</sup> - Tested and approved for compatibility when used with one (1) LED tube lamp only.

<sup>3</sup> - 90 minutes is the mandated minimum run time per NFPA 70 NEC code. Due to their efficient low power consumption, RVLT Uni-Fit Tube Lamps will run MUCH longer, however, results will vary.

NFPA 70 NEC code mandates a minimum light level of 0.6 foot-candles on the ground from an emergency lighting fixture to be maintained for a minimum of 90 minutes. In order to confirm appropriate results will be achieved, RVLT products should be installed in their actual intended fixture/area for final verification of operation and performance. Conduct a test using the emergency fixture(s) within the actual area to ensure that the single battery-lit tube will provide safe emergency egress light levels.

Check with all agencies having jurisdiction to verify if any other life safety codes may apply.

Several factors can adversely affect actual ballast/battery performance, including ballast condition, wiring/socket condition, power supply instability, power switch type, installation situation, ambient temperature, and vibration. The quality of the main power supplied to the region/facility/room/area, existing wiring and installation, and varying production versions of the above listed ballasts may affect ballast/lamp performance. As always, RVLT products should be installed in their actual intended fixture/area for final verification and approval of operation and performance.

Compatibility with battery units has only been tested and confirmed with linear RVLT Uni-Fit Tube Lamps listed in the table above at this time. The presence of a battery in this table is not a guarantee or warranty of the compatibility of the LED lamp/luminaire in any particular installation. Incompatibility of a battery unit not listed in this table should not be assumed. If the intended battery unit is not listed in the table above, contact your RVLT representative to request specific battery compatibility testing.

Please refer to the emergency lighting battery unit manufacturer's specifications and installation instructions for additional information.

Please refer to the "Important Pre-Installation and Post-Installation Notes for All RVLT Uni-Fit Products" section below for important additional information about system safety and performance.

**TESTING NOTE:**

RVLT's in-house compatibility testing is conducted in a controlled laboratory environment utilizing basic on/off switching and 24- to 72-hour longevity tests. During this time the battery is charged completely according to the manufacturer's instructions before we collect electrical and thermal measurements to determine if the ballast-battery-lamp relationship is efficient, reliable, and safe. Several factors can adversely affect actual ballast and battery performance, including ballast/battery condition, wiring/socket condition, power-supply instability, power switch type, installation situation, ambient temperature, and vibration.



## Ballast Compatibilities for Uni-Fit T5 Tube Lamps (Subject to Change)

Ballast Model No.	Start Type	Power Level	Ballast Factor	Generation 1 Uni-Fit T5 Tube Compatibility	
				27W T5 HO <i>Applicable SKU Family: 204321-11X</i>	13W T5 HE <i>Applicable SKU Family: 204321-11X</i>
<b>Fulham</b>					
WH3-120-L	ISE	Normal	1.00	✓	N/C
RHA-UNV-454-LT5	ISE	Normal	1.00	✓	N/C
<b>Fusion</b>					
FB254T5MVE	PSE	Normal	1.00	✓	N/C
FB254347T5E	PSE	Normal	1.00	✓	N/C
FB454347T5MVE	PSE	Normal	1.00	✓	N/C
FB454T5MVE	PSE	Normal	1.00	✓	N/C
<b>Halco</b>					
EP254HO/PS/MV/MC	PSE	Normal	1.00	✓	N/C
EP454HO/PS/MV	PSE	Normal	1.00	✓	N/C
<b>Howard</b>					
EP254HO/PS/MV	PSE	Normal	1.00	✓	N/C
<b>Howard</b>					
EP254HO/PS/MV	PSE	Normal	1.00	✓	N/C
<b>Keystone</b>					
KTEB-254HO-UV-PS-SL	PSE	Normal	1.00	✓	N/C
KTEB-254HO-UV-PS-SC	PSE	Normal	1.00	✓	N/C
KTEB-254HO-UV-PS/A	PSE	Normal	1.00	✓	N/C
KTEB-454HO-UV-PS	PSE	Normal	1.00	✓	N/C
KTEB-228HE-UV-PS-SL	PSE	Normal	1.00	N/C	✓
KTEB-228HE-UV-PS-SC	PSE	Normal	1.00	N/C	✓
<b>Philips Advance</b>					
ICN-2S54-N	PSE	Normal	1.00	✓	N/C
EL1/254A26	PSE	Normal	1.00	✓	N/C
ICN-2S28	PSE	Normal	1.00	N/C	✓
ICN-2S28-T	PSE	Normal	1.00	N/C	✓
<b>Sunpark</b>					
U-2/54T5HO	PSE	Normal	1.00	✓	N/C
<b>Sylvania</b>					
QTP 4x54T5HO/UNV PSN HT W	PSE	Normal	1.00	✓	N/C
<b>Universal</b>					
B454PUNV-E	PSE	Normal	1.00	✓	N/C
B454PUNVHB-E	PSE	Normal	1.00	✓	N/C
B228PUNV-N	PSE	Normal	1.00	N/C	✓

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N/C = Not Compatible

<sup>1</sup> Dimmable ballast product; special dimmers, such as "0-10V" or "Mk.10 Powerline" units may be required for proper functionality. It is the end user's responsibility to determine the correct dimmer type for use with their particular ballast. As always, RVLT products should be installed in their actual intended fixture/area for final verification of operation and performance.

Several factors can adversely affect actual ballast performance, including ballast condition, wiring/socket condition, power-supply instability, power switch type, installation situation, ambient temperature, and vibration. The quality of the main power supplied to the region/facility/room/area, existing wiring and installation, and varying production versions of the above listed ballasts may affect ballast/lamp performance. As always, RVLT products should be installed in their actual intended fixture/area for final verification and approval of operation and performance.

When checking ballasts on this compatibility list, ensure that the EXACT model number on the ballast matches the listed Ballast Model No. **EXACTLY**. A single different letter or digit can signify completely different functionality and compatibility. The presence of a ballast in these tables is not a guarantee or warranty of the compatibility of the LED lamp/luminaire in any particular installation. Incompatibility of ballasts not listed in these tables should not be assumed. If an intended ballast is not listed in the tables above, contact your RVLT representative to request specific ballast compatibility testing.

Please refer to the ballast manufacturer's specifications and installation instructions for additional information.

Please refer to the "Important Pre-Installation and Post-Installation Notes for All RVLT Uni-Fit Products" section below for important additional information about system safety and performance.

**TESTING NOTE:**

RVLT's in-house compatibility testing is conducted in a controlled laboratory environment utilizing basic on/off switching and 24- to 72-hour longevity tests. During this time we collect electrical and thermal measurements to determine the overall stress on the ballast and on our tube lamps. From these data, we determine whether the ballast-lamp relationship is efficient, reliable, and safe. Several factors can adversely affect actual ballast performance, including ballast condition, wiring/socket condition, power-supply instability, power switch type, installation situation, ambient temperature, and vibration.

## Important Pre-Installation and Post-Installation Notes for All RVLT Uni-Fit Products

Please see the following important notes about before, during, and after installing RVLT Uni-Fit Tube Lamps:

- Before buying and installing any RVLT Uni-Fit Tube Lamps, RVLT strongly suggests replacing all ballasts with new ballasts that have been tested and listed on the RVLT Ballast Compatibility List. If full ballast replacement is not possible, EACH AND EVERY ballast at the job site must be checked to ensure that it has been tested and is listed on the RVLT Ballast Compatibility List prior to the installation of the RVLT Uni-Fit Tube Lamps. Therefore, ballasts ideally should be checked during the initial sales audit/quoting phase or during the installation phase of the project.
- Before installing RVLT Uni-Fit Tube Lamps, ensure that the number of tubes installed in the fixture matches the number of tubes allowed as printed on the ballast. Do not de-lamp the fixture and install less than the number of tubes intended. For example, if the ballast is made to handle 4 tubes, ensure that 4 LED tubes are installed. If fewer than 4 tubes are needed, install an appropriate ballast for that number of tubes.
- Before buying and installing RVLT Uni-Fit Tube Lamps, check the configuration and condition of the fixture wiring. Ensure that the wiring configuration used matches the appropriate wiring diagram printed on the ballast to be used. RVLT strongly suggests replacing ALL of the wiring in the fixture if any wires are damaged or in poor condition.
- RVLT strongly suggests replacing ALL of the sockets in the fixture using the appropriate size and style to match the fixture and ballast type in order to avoid any complications or failures due to damaged or fatigued sockets. If full replacement of all sockets is not possible, check the condition of the fixture sockets (tombstones) BEFORE buying and installing RVLT Uni-Fit Tube Lamps. Any damaged or defective sockets MUST be replaced prior to installing RVLT Uni-Fit Tube Lamps.
- Before installing RVLT Uni-Fit Tube Lamps, **ALWAYS ENSURE THAT THE POWER IS OFF TO THE FIXTURE (BALLAST) BEFORE AND DURING THE INSTALLATION** of any RVLT Uni-Fit Tube Lamps or other products. Remove and replace ALL tubes in the fixture before turning power back ON to the fixture (ballast). **NO HOT SWAPPING!** Failure to have the power OFF will void the RVLT Uni-Fit Tube Lamp warranty.
- When installing RVLT Uni-Fit Tube Lamps, install the lamp properly so that it is fully seated in its proper orientation. Ensure that there is no gap between the tube lamp and the socket and that the sockets are not pushed outward after the tube is installed. Failure to ensure proper installation and contact may lead to poor contact, which may generate high-voltage arcing between the tube's bi-pins and the copper contacts inside the socket.

**WARNING – High-voltage arcing from poor contact can generate high heat that could potentially lead to melting and charring of the socket or tube damage! Always ensure that the tubes fit properly in the fixture and sockets before restoring power to the fixture!**



