



Sep. 23rd, 2020

E324690
4790066346

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Attention: Mr. Steven Huang

Reference: E324690, 4790066346

Subject: TYPE 4X EVALUATION OF UL50E AND CSA C22.2 NO.94.2-15 FOR Camera, MODEL FE9391-EHV-v2 and FE931-EHV

Dear Mr. Steven Huang:

We have completed our evaluation, and this letter will serve as our report. For the file record, our evaluation only covers the applicable requirements needed to establish a Type 4X rating for representative samples Model FE9391-EHV-v2, manufactured by VIVOTEK INC, in accordance with UL 50E, Enclosures for Electrical Equipment, Environmental Considerations, Second Edition, Issue Date October 16th, 2015 and the Standard for Enclosure for Electrical Equipment, Environmental Considerations, CSA C22.2 No. 94.2-15, Second Edition, October 16th, 2015. At the conclusion of our investigation, we found the results were acceptable. We have attached the data sheets with this letter.

- Our evaluation including:

1. FE9391-EHV-v2 and FE931-EHV have been complied with outdoor use of IEC 60950-22 evaluation and followed additional evaluating Type 4X. Except existed critical components in end product report, the additional critical components as below should be listed in the end product report.
2. Mechanical related tests have been evaluated in IEC 60950-22.

- Model difference:

FE9391-EHV-v2 and FE931-EHV share identical constructure. Model names are for marketing purpose only.

**TABLE: Except below list of additional critical components, others critical components have been indicated in end product report.**

Object / part No.	Manufacturer / trademark	Type / model	Technical data	Evaluating and Comments
Top metal enclosure	Interchangeable	Interchangeable	Aluminum alloy, ADC12(Aluminum >85%), 2.5 mm thickness minimum.	This material is considered to comply with UL50E, 7.2. Corrosion protection requirements due to aluminum alloy material. See Appendix-1 for overall dimension.
Bottom metal enclosure	Interchangeable	Interchangeable	Aluminum alloy, ADC12(Aluminum >85%), thickness 2.5 mm minimum.	This material is considered to comply with UL50E, 7.2. Corrosion protection requirements due to aluminum alloy material. See Appendix-2 for overall dimension.
Coating	Ching Song Paint Manufactory CO., LTD.	11010	Thickness min.60µm	Apply on top and bottom metal enclosure.
Plastic lens cover	TEIJIN LIMITED RESIN AND PLASTIC	L-1225U(#)(f1), L-1225V(#)(f1), L-1225Z(#1)(f1)	Thickness 2.5 mm minimum.	UL QMFZ2/8, E50075 See Appendix-3 for mechanical drawing.
Plastic IR LED cover	TEIJIN LIMITED RESIN AND PLASTIC	L-1225U(#)(f1), L-1225V(#)(f1), L-1225Z(#1)(f1)	Thickness 2.4 mm minimum.	UL QMFZ2/8, E50075 See Appendix-4 for mechanical drawing.
Enclosure screw	Interchangeable	Interchangeable	Stainless Steel 304, M3, Torque min 6.0±0.5 kgf-cm	See Appendix-5 for location
Bottom screw	Interchangeable	Interchangeable	Stainless Steel 304	See Appendix-6 for location
Mounting kit	Interchangeable	Interchangeable	Aluminum alloy, thickness 3 mm	See Appendix-6 for location
Gasket (Between plastic lens cover and top metal enclosure)	Momentive Performance Materials Japan L L C	TSE2186U(aq)	Silicone rubber.	Gasket test refer to E324690-4788519029.1-1 See Appendix-7 for mechanical drawing.

TABLE: Except below list of additional critical components, others critical components have been indicated in end product report.

Object / part No.	Manufacturer / trademark	Type / model	Technical data	Evaluating and Comments
Gasket (Between top plastic IR LED cover and top metal enclosure inner)	Momentive Performance Materials Japan L L C	TSE2186U(aq)	Silicone rubber.	Gasket test refer to E324690-4788519029.1-1 See Appendix-8 for mechanical drawing.
Gasket (Between top plastic IR LED cover and top metal enclosure outer)	Momentive Performance Materials Japan L L C	TSE2186U(aq)	Silicone rubber.	Gasket test refer to E324690-4788519029.1-1 See Appendix-9 for mechanical drawing.
Gasket (Between top metal enclosure and bottom metal enclosure)	Momentive Performance Materials Japan L L C	TSE2186U(aq)	Silicone rubber.	Gasket test refer to E324690-4788519029.1-1 See Appendix-10 for mechanical drawing.
Gasket (Between bottom screw and bottom metal enclosure)	ExxonMobil	Vistalon 3666	EPDM Rubber (Vivotek part No. 612017300G)	Gasket test refer to E324690-A4 See Appendix-11 for mechanical drawing
Gasket (Between top metal enclosure and microphone)	Momentive Performance Materials Japan L L C	TSE221-5U(ad)	Silicone rubber.	Gasket test refer to E324690-4789394164-1 See Appendix-12 for mechanical drawing.
IO cable rubber (For LAN cable used)	Momentive Performance Materials Japan L L C	TSE221-5U(ad)	Silicone rubber.	Gasket test refer to E324690-4789394164-1 See Appendix-13 for mechanical drawing.
IO cable rubber (For DC cable used)	Momentive Performance Materials Japan L L C	TSE2186U(aq)	Silicone rubber.	Gasket test refer to E324690-4789394164-1 See Appendix-14 for mechanical drawing.

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No tests were performed on Camera, FE9391-EHV-v2 and FE931-EHV, since the constructure is identical to FE9382-EHV-v2 (E324690-V1-S27), except for the height of the plastic lens cover.

- Marking requirements:

1. The device shall be marked properly to indicate the environmental conditions for which they are suitable, such as "Type 4X Enclosure", or equivalent.
2. The additional marked with the supplemental marking may be provide, such as "Raintight", "Watertight", "Corrosion Resistant" or equivalent.

- Cord Construction Suggestion:

1. We suggest the Flexible cord shall be water resistance and UV resistance type. The "W" was added to cord type signifies outdoor use, such as SW, SJW, SJOW.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC or any authorized licensee of UL

If you have any further questions or comments concerning the above, please feel free to contact us.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Hans Tu'.

Alvin Chin

Hans Tu / Alvin Chin
Engineer
Conformity Assessment Services,
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Reviewed by:

Cloud Chen

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