



# VERY LOW FREQUENCY AC HIPOT VLF Cable Testing for Cables rated to 115kV

## VLF-140CMF

### Features and Benefits

The High Voltage, Inc. **VLF-140CMF** was designed for withstand and diagnostic testing of cable systems up to 115kV. The VLF-140CMF is a higher power alternative to our VLF-12011CMF, capable of testing up to 70,000 ft of cable. It can be used with optional Tan Delta or Partial Discharge equipment for cable diagnostics. HVI introduced Sinewave output VLF technology in 1997 and the VLF-140CMF has been manufactured since 2012. The multi-piece design allows many transportation configurations, cargo trailer, flatbed, custom designs.

### Specifications

<b>Input</b>	230V, 80A peak, 50/60Hz (Single phase)
<b>Output</b>	Sinusoidal 0-140kVac peak, 100mA, Bushing Output
<b>Load capacitance</b>	1.5 $\mu$ F @ 0.1 Hz, up to 7.5 microfarad @ 0.02 Hz
<b>Duty</b>	Continuous
<b>Metering and control</b>	Voltmeter: 0-140kVac peak, Analog (3.5 in. display) Current meter: 0-200 mA ac, Analog (3.5 in. display) Capacitance meter: 0-6microfarads On/Off Controls with zero start interlock Fixed Primary overload, 120% of primary rating Three Fixed Operating Frequencies: 0.1/.05/.02 Hz Burn/Hipot Operation Mode Switch Digital Dwell Timer Automatic return to zero External interlock
<b>Sizes</b>	Control: 24" w x 30" d x 62" h (610mm x 762mm x 1575mm) HV Tank: 60" w x 37" d x 62" h (1524mm x 940mm x 1575mm)
<b>Weights</b>	Control: Approx. 750 lbs. (341 kg) HV Tank: Approx. 2560 lbs. (1161kg)



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Standard Control Package



High Voltage Section

### IEEE Std. 400.2-2023

WAVEFORM	Cable system rating (phase to phase) [kV]	Installation (phase to ground)		Acceptance (phase to ground)		Maintenance <sup>2</sup> (phase to ground) (see Note 2)		
		[kV RMS]	[kV PEAK]	[kV RMS]	[kV PEAK]	[kV RMS]	[kV PEAK]	
Sinusoidal	5		9	13	10	14	7	10
	8		11	16	13	18	10	14
	15		19	27	21	30	16	22
	20		24 (Note 3)	34 (Note 3)	26	37	20	28
	25		29 (Note 3)	41 (Note 3)	32	45	24 (Note 3)	34 (Note 3)
	28		32	45	36 (Note 3)	51 (Note 3)	27	38
	30		34	48	38	54	29 (Note 3)	41
	35		39	55	44	62	33	47
	46		51	72	57	81	43	61
	69		75	106	84	119	63	89
	115		125 (Note 4)	176 (Note 4)	140 (Note 4)	198 (Note 4)	105 (Note 4)	148 (Note 4)
	138		150 (Note 4)	212 (Note 4)	168 (Note 4)	238 (Note 4)	126 (Note 4)	178 (Note 4)

**NOTE 1** - If the operating voltage is a voltage class lower than the rated voltage of the cable, it is recommended that the **maintenance** test voltages should be those corresponding to the operating voltage class.

**NOTE 2** - The maintenance voltage is about 75% of the acceptance test voltage magnitude.

**NOTE 3** - Some existing test sets have a maximum voltage that is up to 5% below the values listed in the table. These test sets are acceptable to be used. However, there is a risk that the cable may be "undertested" due to a combination of lower test voltage and allowed uncertainty of the measuring circuit.

**NOTE 4** - Voltage Levels are based upon current practice where the relative test voltages decrease as the cable rating increases to compensate for the changes in design stress for HV vs MV cables. Considering typical cable designs the stresses at test voltages for HV cables are more than twice those for MV cables. Lower voltages levels may be used upon agreement with the circuit owner.