



Trimble Europe BV
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THE NETHERLANDS

March 21, 2016

SUMOMETRICS INDUSTRIES INC.
Unit 11 Facilities Center Cond.,
548 Shaw Blvd., Mandaluyong City 1552
Attention : MR. Richard Albert Y. Lim
President / CEO
RE : REFTEK 130-SMHR SEISMIC ACCELEROGRAPH

Dear Sir :

We, Trimble Europe B.V. confirmed and certified that we had reviewed and evaluated the 2015 DPWH Guidelines and Implementing Rules on the Earthquake Recording Instrumentation for buildings and confirmed that the 130-SMHR not only complied but more so exceeded the minimum technical specification of the accelerograph requirements, more so as follows :

2015 DPWH SPECIFICATIONS

Accelerograph :
Seismic Qualified

Stores Seismic Activity Info
Equipped with Fault Detection
Real time alarm information (either audio, visual or both)
Internal Battery backup power
Minimum Design Life : 10 years
40,000-hour (minimum) mean time between failure
Minimum of three components

Natural Frequency : Above 50Hz
Damping : Approximately 60-70 percent critical
Sensitivity : 2g
Bandwidth : DC to 100Hz
Environment : IP67

Recording :

Sampling Frequency : Min. of 100 Samples per second
Time : From at least 20 secs before the ground shaking
Begins until 30 secs after the last triggering level
motion.
RMS Noise : System noise shall be less than 40µg over 0-30Hz
Media : Memory Card
Continuous Recording : Capable
AD Converter : 16 bits

130-SMHR ACCELEROGRAPH

Sandia National Laboratories /
ANCO Engineers / CE Compliance
YES
YES (LCD Screen)
Accelerograph, Alarm / PEIS, MMI - comp.
48 hours maintained by charger.
YES
100,000 hour
YES- Tri axial Forced Balanced
Accelerometer
100Hz
70% Critical
4g
DC to 150Hz
IP67- Accelerograph incl. Data Recorder

100,125,200,250,500,1000 User Settable

YES – User settable
YES
32Gb Compact Flash Memory Card
YES
24 bit



2015 DPWH SPECIFICATIONS

130-SMHR ACCELEROGRAPH

Timing :

Interval : Half a second or less

YES

Accuracy : Plus or minus 0.2 sec per 100 sec

YES

TYPE : GPS or NTP Server

GPS

Triggering (As Applicable) :

Method : Pendulum or other device using Earthquake as an exciting Force

Forced Balanced Accelerometer

Level : Accelerograph : 0.5 gals to 100 gals nominal velocimeter : 5µm/s to 1mm/s

.0001g to 4g , 0.0982 Gals to 3,926 Gals

Time : Full operation of accelerograph/Velocity in not over 0.1 sec after activation

YES – continuous operations

POWER : Battery maintained by charger

48 hrs 12v 12Amp internal battery

Communication :

Ethernet : 10 base-T or 100 base-TX

YES

Protocol : TCP/IP FTP/SFTP

YES

All parts and devices that affect accuracy like the GPS, accelerometer, accelerograph recorder,alarms, extenders ,repeaters and its accessories are manufactured, certified and tested by Reftek, a subsidiary of Trimble Europe BV.

Additional feature introduced is to link the three accelerograph located at the top, mid, and basement or ground floor area of building to a single computer for ease of operation wherein building management can monitor, extract , print data and information in a single location. As a point of clarification, this computer can in no way affect the accuracy of the accelerograph for the 130-smhr is the one that senses and stores the information from a seismic event and the computer only acts as a viewer to the already stored information in the accelerograph.

This certification comprising of two pages was issued for whatever legal intent it may have.

Yours Truly,

Paul Drummond

Regional Sales Manager – Asia Pacific

Trimble Monitoring Solutions