CALIBRATION SHEET
SNOW SCALE SENSOR

Tis calibration sheet is to ensure standarized calibration process for every snow scale crafted by CEAZA. The commands shown in this doccument have been improved for Hercules serial terminal software.
The power supply for scale must be set between 5V and 14V with at least 100mA of current capacity.
Wire connection:

Scale wire color code	
Red	Vin (+)
Black	GND (-)
Yellow	RS-485 (A+)
White	RS-485 (B-)

1. Basic parameters and measurements

Snow Scale Lite	
BRAND:	CEAZA
RS-485 id:	141
Baud	9600
Sensor Name:	PN2320
Firmware:	V20230605.1
MCU:	ATmega328pb

Set Parameters	
RS-485 id:	<<255,set_id,141>
Baud:	<<141,set_baud,9600>
Name:	<<141,set_name,PN2320>

Scale temperature during test (°C)	
Query:	<<141,get_t>
Temp:	19.25

2. Load Cell Calibration

To calibrate the load cells, it is essential to request the instruments to provide their raw measurements for a well-known mass applied to each cell (A1, B1, A2, B2). The command for this inquiry is highlighted in blue below.

Raw data query:	<<141,get_raw>

The answer must be received after few seconds, with the format "raw_a1,raw_b1,raw_a2,raw_b2" finished by a new line "\n".

I - RAW load cells data Input					
RAW A1	**RAW B1**	**RAW A2**	**RAW B2**	**Load increase (Kg)**	**Total Load (Kg)**
290640	-55821	69958	10035	0	0
29242	-189841	-176186	-118906	4.807	4.807
-44569	-227681	-245513	-155293	1.3791	6.1861

Calibration parameter calculation for each cell				COM Terminal setting command (in Hercules)	
Cell	**Proportional**	**Offset**	**R2**	**CMD prop**	**CMD offset**
A1	-0.0000184	5.356382277	0.9999918	<<141,set_prop_a1,-0.0000184>	<<141,set_offset_a1,5.3563823>
B1	-0.0000360	-2.009671921	0.9999917	<<141,set_prop_b1,-0.0000360>	<<141,set_offset_b1,-2.0096719>
A2	-0.0000196	1.367730896	0.9999889	<<141,set_prop_a2,-0.0000196>	<<141,set_offset_a2,1.3677309>
B2	-0.0000374	0.372781410	0.9999911	<<141,set_prop_b2,-0.0000374>	<<141,set_offset_b2,0.3727814>

3. Scale Calibration

When every cell is calibrated, the scale surface must be placed and then a calibration of the instrument must be performed.

II - Instrument Calibration Input		
Meas.(Kg)	**Added Load(Kg)**	**Total(Kg)**
0.57	0	0
1.93	1.3791	1.379
6.68	4.807	6.186

Prop.	**Offset**
1.012336333	-0.57601585

<<141,set_prop,1.0123363>
<<141,set_offset,-0.5760158>