1. Introduction

Congratulations and thank you for purchasing a Kilotech KLE series scale. As with all Kilotech quality products, proper care and maintenance must be adopted in order to keep the scale at peek performance.

2. Description

The KLE economy series electronic scales are precision instruments, designed to provide years of service with virtually no maintenance. The KLE contains a one piece solid-state precision electronics PC board and a five digit LCD display which is 0.5 inches in height. Power is supplied through an AC adapter (included) or batteries.

。 Portable Advanced balances contain two display menus which enable you to calibrate and configure the balance for specific operating requirements.

。 CALIBRATION Menu – Allows the balance to be calibrated by using standard weights.

。 SETUP Menu – allows the balance to be set for environmental conditions and customized for specific weighing functions.

When the balance is first turned on, it can be used to weigh in grams tare items without setting the menus. Refer to the individual menus in this manual for detailed descriptions and procedures for programming.

3.Unpacking
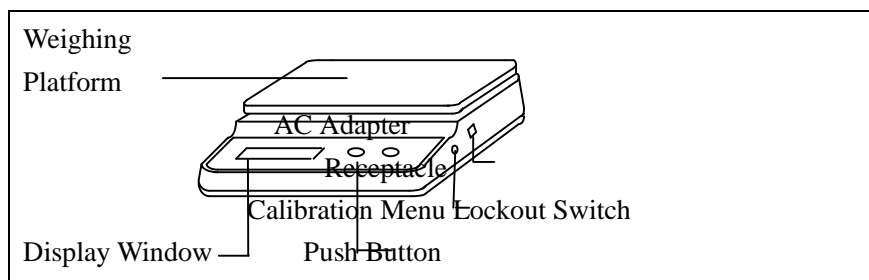
All Portable Advanced balances are supplied with a weighing platform, some of which have been installed, AC power adapter, instruction manual ,and certificate of quality.

4．Environment

Balance performance can be affected by excessive air currents, corrosives, vibration, temperature or humidity extremes.

DO NOT use the scale:

- Next to open windows or doors causing drafts or rapid temperature changes.
- Near air conditioning or heat vents.
- Near vibrating, rotating or reciprocating equipment.
- On a non-level work surface.
- Near corrosive vapors (example: nitric acid).

5．INSTALLATION

5.1 Power

5.1.1 The scale can be operated using 4 AA alkaline (not included), or the AC adapter supplied.

5.1.2 AC adapter/Batteries

Plug the jack from the adapter into the receptacle located on the side of the scale. Plug the adapter into a 110v AC outlet or install 4 AA alkaline batteries in holder under the scale.

5.2 Battery Installation

⑴ Turn the balance over.

⑵ Press the tabs on the battery cover inward and lift the cover off.

⑶ Remove the battery holder.

⑷ Install the 4AA alkaline battery in the battery holder, orienting the Plus (+) and minus (-) ends as indicated on the holder.

5   Replace the battery cover.

6. Operation

### 6.1 Turning the Balance On and Off

Will no load on the platform, press (ON/TARE). All segments of the display will turn on, then the software version is displayed. Parts Counting Indicator
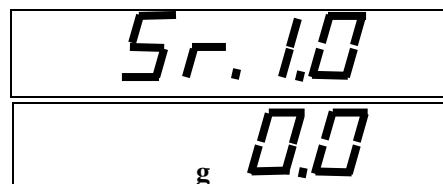
Low Battery Indicator

Weighing Unit Indicators
& Stability Indicators

NOTE: Allow at least 5 minutes for the balance to temperature stabilize before using. If the balance is moved to a different temperature environment, allow additional time to stabilize.

To turn the balance off, press and hold (OFF/MODE) until **OFF** is displayed, then release it.
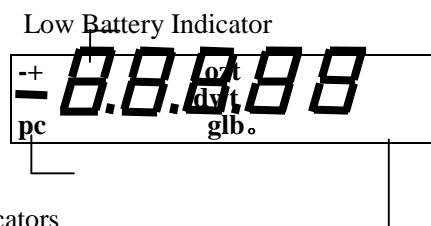
6.2 Checking Calibration

Before using the balance, its calibration should be checked. The balance has been calibrated before shipment, however, calibration is influenced by factors such an :

⑴ Variations in the earth gravitational field at different latitudes of the world.

⑵ Rough handling.

⑶ Changes in work location.

⑷ Height above sea level.

To check the balance's calibration, place a known mass on the center of the platform and read the displayed weight.

If the displayed weight differs from the known mass by more than acceptable limits, refer to the Calibration Menu and the Specifications at the rear of the manual.

6.3 Weighing

⑴ Press (ON/TARE) the display to zero.

⑵ Place the object to be weighed on the platform.

⑶ Wait until the unit indicator appears before reading the displayed weight. When the unit indicator appears, the reading is stable.

6.4 Taring

When weighing samples that must be held in a container, taring enables the balance to subtract the weight of the container and display only the net weight of the sample.

⑴ Press (ON/TARE) with no load on the platform to set the display to zero.

⑵ Place the empty container on the platform.. Its weight will be displayed.

⑶ Press (ON/TARE) Zero will be displayed and the container's weight will be stored in the balance's memory.

⑷ Add the sample to the container and read its net weight on the display.

⑸ When the container and its contents are removed, the container weight will be displayed as a negative number.

The tared weight will remain in memory until (ON/TARE) is pressed again or the balance is turned off.

6.5 Parts Counting

The scale will count parts based on the weight of a reference sample,**5,10,20,30,40** or **50** parts. For optimum results, the parts should be uniform in weight.

● Repeatedly press "**OFF/MODE**" until "**pc CON**" is displayed.

● Place a container on the platform, then press "**ON/TARE**" . the balance displays **pc ADD 5** which is the preset reference quantity. "5" shows the quantity of the reference

sample.

● To change the reference quantity, repeatedly press "**OFF/MODE**" until the desired quantity displayed.

NOTE: If you need to exit or restart parts counting at any time, press and hold

ᴏɴ TARE until **pc CON** is displayed, then release it . Return to step 2 to restart, or press ᴏꜰꜰ MODE for other weighing functions.

● Add the displayed number of parts to the container, then press ᴏɴ TARE balance will display the current number of parts.

NOTE : If "**PCE rr**" is displayed, the sample is too small to provide accurate results within the selected parts counting error level ("**PCE rr**" of the Setup menu).

Parts Counting Factory Settings
Parts Counting Mode ………….. Disabled
P C Err ……………………………. OFF

pc *Con*

pc *Add S*

PCErr

● Add parts to the container as desired and read the quantity on the display. At this time, only "**PC**" counting signal is displayed.

NOTE : The reference quantity will remain in memory until it is changed or balance is turned off..

● To switch between viewing the quantity and weight of the parts,

press ᴏꜰꜰ MODE

6.6 Programming of the Modes(**g,oz,lb,ozt,ct**)

Press ᴏɴ TARE power on.

When at **0.00g**

Press ᴏꜰꜰ MODE at the same time and hold till you get to **SEL**.

You will be going through(**CAL,SETUP,SEL) AND Release**.

Press ᴏɴ TARE select g,oz,lb, etc.
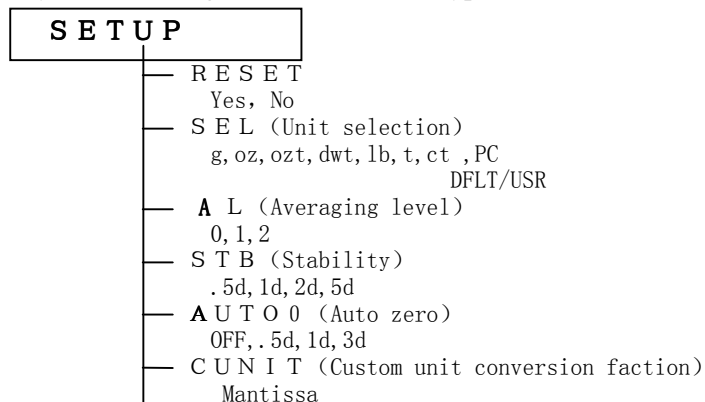
Press ᴏꜰꜰ MODE on or off for each selection.

When completed, press ᴏɴ TARE til read out is back to **SEL**.

Press ᴏꜰꜰ MODE end.

Press ᴏɴ TARE et.

7. Using Menus To Configure The Balance

The following illustration identifies the items in each menu and
The factory default settings are shown in bold type.

```
S E T U P
         ─── R E S E T
               Yes, No
         ─── S E L (Unit selection)
               g, oz, ozt, dwt, lb, t, ct , PC
                                   DFLT/USR
         ─── A L (Averaging level)
               0, 1, 2
         ─── S T B (Stability)
               .5d, 1d, 2d, 5d
         ─── A U T O 0 (Auto zero)
               OFF, .5d, 1d, 3d
         ─── C U N I T (Custom unit conversion faction)
                Mantissa
```

```
                        1.0000
                      Exponent
                        E0, E1, E2, E3
                        E-3, E-2, E-1
                      LSE
                         .1d, .2d, .5d, 1d
                         2d, 5d, 10d
                ── P C E r r (Parts counting error level)
                      OFF, 1, 2.5, 5
                ── A. 0 F F (Auto off)
                      OFF, 60, 120, 180
                ── E N D
```

To access a menu, press and hold $\left(\begin{smallmatrix} ON \\ TARE \end{smallmatrix}\right)$ til desired menu appears, then release it .
Use these buttons to step through menus and select submenus :

next   select
sel $\left(\begin{smallmatrix} OFF \\ MODE \end{smallmatrix}\right)$ n   displayed iter $\left(\begin{smallmatrix} ON \\ TARE \end{smallmatrix}\right)$

7.1 Calibration Menu

$\left(\begin{smallmatrix} ON \\ TARE \end{smallmatrix}\right)$ e Portable Advanced balances can be calibrate with standard masses . Dress and hold with no load on the platform, until "**CAL**" is displayed , then release it. Access "**CAL**" menu. Balance will first display "**CAL**". In a few seconds , balance will display **"CAL A"**, then put the required calibration masses listed in the adjacent table center of the platform . Press $\left(\begin{smallmatrix} ON \\ TARE \end{smallmatrix}\right)$ alance displays "**CAL**". In a few seconds, balance will display "**CAL S**". Take away the weight from the platform, press , bal $\left(\begin{smallmatrix} ON \\ TARE \end{smallmatrix}\right)$ display "**CAL**". In a few seconds, balance will display zero, indicating that calibration ends. Normal weighing can be done .
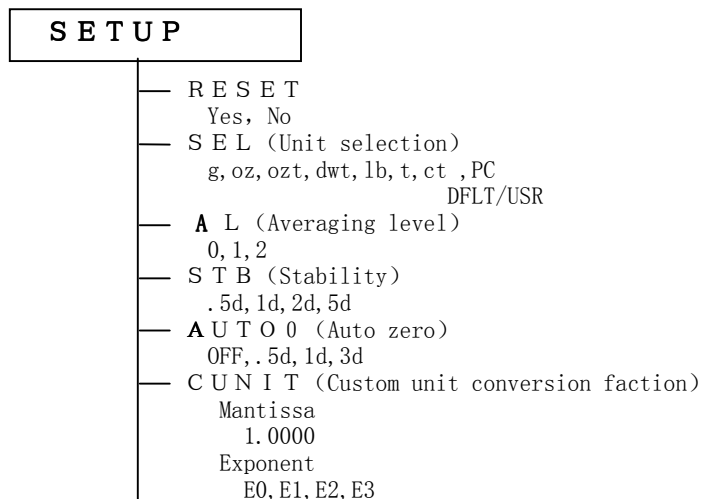
7.2 Calibration Masses

Before beginning calibration, make sure calibrated masses are on hand. If you begin calibration and realize masses are not available (masses are not accurate), either turn the balance off, or go through the procedure without masses. The balance will use previously stored calibration date. Calibration should be performed as necessary to ensure accurate weighing .

Required Calibration Masses	
MODEL	Span Masses
KLE-200	200g
KLE-2000	2000g

8. SETUP MENU

The Setup menu is used to customize the operation of the balance for your specific requirements. It contains submenus which enable you to turn features on or off, and program balance parameters. The illustration below indicates in which submenus appear on the Setup menu.

```
┌─────────────────────┐
│ S E T U P           │
└─────────────────────┘
        │
        ── R E S E T
        │    Yes, No
        ── S E L (Unit selection)
        │    g, oz, ozt, dwt, lb, t, ct , PC
        │                      DFLT/USR
        ── A L (Averaging level)
        │    0, 1, 2
        ── S T B (Stability)
        │    .5d, 1d, 2d, 5d
        ── A U T O 0 (Auto zero)
        │    OFF, .5d, 1d, 3d
        ── C U N I T (Custom unit conversion faction)
        │     Mantissa
        │       1.0000
        │     Exponent
        │       E0, E1, E2, E3
        │
        │
        │
```

```
          E-3, E-2, E-1
        LSE
           .1d, .2d, .5d, 1d
           2d, 5d, 10d
    ── P C E r r (Parts counting error level)
       OFF, 1, 2. 5, 5
    ── A．0 F F （Auto off）
       OFF, 60, 120, 180
    ── E N D
```

8.1 Accessing the Setup Menu

To access the Setup menu, press and hold ⊙ ON TARE SETUP is Displayed, then release.

8.2 To access a submenu :

⑴   Repeatedly press ⊙ OFF MODE until the desired submenu is displayed.

⑵   Press ⊙ ON TARE elect the displayed submenu.

NOTE : You must use END to store any changes you make to the Setup menu.

The following sections describe each item on the Setup menu in detail.

8.3 Reset to Factory Settings

This submenu enables you to reset all Setup menu selections to the original factory setting outlined in the adjacent table.

To reset to factory settings :

⑴   Access the Reset submenu.

⑵   Press ⊙ ON TARE ter RESET.

⑶   Press ⊙ OFF MODE eatedly to change the setting fro   he Setup menu to the original factory setting.

⑷   Press ⊙ ON TARE cept the displayed setting.

SETUP MENU FACTORY SETTING	
Unit Selection	g
Averaging level	1
Stability	1 d
Auto Zero	. 5 d
Conversion	
Mantissa	1. 0000
Exponent	0
LSD	1
PC Error Level	OFF
Auto Off	OFF

8.4 Unit Selection

The Unit Selection submenu permits you to specify which weighing units and operating modes will be enabled for use during operation. The adjacent table lists the units and modes available on Portable Advanced balances.

⑴   Access the **Sel** submenu.

⑵   Press ⊙ ON TARE display will show the grams unit inc ator (g) along with the current status (ON/OFF).
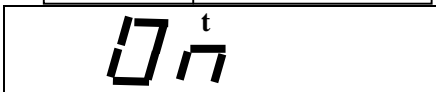
⑶   Press to change the status.

⑷   Press to accept the displayed status, when released, the display will show the next unit indicator along with the current status.

⑸   Set each unit or mode **ON** or **OFF** as in steps 3 and 4.

Display Indicator	Weighing units and Modes
g	grams
oz	ounces
ozt	troy ounces
dwt	pennyweight
lb	pounds
t	taels
ct	crat
pc	parts counting

8.5 Taels

If taels are enabled, you will be required to choose one of three different taels : Hong Kong,

Singapore, or Taiwan.

(1) When the display shows Hong Kong TAEL1, press (OFF/MODE) change to another tael if desired.

```
tAEL 1
```

```
tAEL 2
```

Singapore

(2) Press (ON/TARE) cept the displayed tael.

```
tAEL 3
```
T

aiwan

8.6 Unit Selection (Cont .)
Proceed through all of the weighing units in the same manner, setting each one as desired.

Custom Units

Custom Units can be set to one of the following :

DFLT Causes carats to be used as the custom unit.

USR Enables you to enter a conversion factor (to convert grams to some other unit of measure), and display weight in the desired custom units. The conversion factor is entered in the **C. Unit** submenu.

```
dFLt
```
```
USr
```
```
C.Unit
```

8.6.1 Custom Unit Conversion Factor

When you need to display weight measurements in a weighing unit Other than those provided standard with the balance, this feature can be used to create your own custom weighing unit. It permits you to enter a conversion factor which the balance will use to convert grams to the desired unit of measure.

One example is shown at the end of this section. It illustrates how to set the conversion factors to display weight in Grains.

Conversion Weight Weight
Factor $\times$ in = in
Grams custom unit

SCIENTIFIC NOTATION				
Conv. Factor	Number Between 0 and 9.9999	Power of 10	Mantissa	Exponent
1234	1.234×1000	=	1.234	10^3
123.4	1.234×100	=	1.234	10^2
12.34	1.234×10	=	1.234	10^1
1.234	1.234×1	=	1.234	10^0
.1234	$1.234 \times .1$	=	1.234	10^{-1}
.01234	$1.234 \times .01$	=	1.234	10^{-2}
.00123	$1.23 \times .001$	=	1.23	10^{-3}

Conversion factors are expressed in scientific notation and entered into the balance in three parts:
- A number between 0 and 9 to four decimal places.
- A power of 10 called the exponent.
- A least significant digit (LSD).

Use the following procedure to enter conversion factors :

(1) Access the C. Unit submenu.

(2) The mantissa of the current conversion factor will be displayed. This will be a number between 0 and 9.9999 with the first digit

```
1.0000
```

flashing. For conversion factors outside of FLASHING
this range, the exponent will be used to move the decimal point.

⑶ Press (OFF MODE) change the value
of the first digit.

⑷ When the desired value is
displayed, press (ON TARE) accept it and
the nest digit will begin flashing.

⑸ Set the value of all digits in
the same manner.

⑹ After the last digit is entered,
 the display will show the current
exponent. The exponent is shown on
the display preceded by the letter E.
There are 7 exponent values which
you can choose from (see table).

⑺ Press (OFF MODE) change the
exponent.

⑻ Press (ON TARE) accept the
displayed exponent. When (ON TARE)
released, the display will show the
current least significant digit.
The least significant digit is the digit in

1.0000

FLASHING

1 d

EXPONENTS	
E-3	Moves decimal point 3 places to the left.
E-2	Moves decimal point 2 places to the lift.
E-1	Moves decimal point 1 place to the left.
E0	**Leaves decimal pointing normal position**
E1	Moves decimal point 1 place to the right.
E2	Moves decimal point 2 places to the right.

the last decimal place on the display.
The selection you make causes the
balance to count by 1's, 2's or 5's
in this position. There are 7 LSD
settings you can choose from (see
table).

⑼ Press (OFF MODE) change the LSD.

⑽ Press (ON TARE) accept the displayed LSD. When
C. Unit will be displayed again and the Setup menu

⑾ Proceed to the next item on the Setup menu   and
save your selections.

LSD's		
LSD	.1	Adds one decimal place And Display counts by1's
LSD	.2	Adds one decimal place And Display by counts by 2's
LSD	.5	Adds one decimal place Display counts by 5's
LSD	**1**	**Display counts by 1's (Normal Setting)**
LSD	2	Display counts by 2's
LSD	5	Display counts by 5's

8.6.2 Converting to "Grains"

⑴ Determine the number of grains equal to one gram :

IF 1 grain = 0.0647989 grams
THEN 1 gram = 1 / 0.0647989

⑵ Since the balance displays only 5   OR 1 gram = 15.43236 grains digits, round
the number to the 5 most significant
digits :

⑶ Using this number, enter the
conversion factor :   "15432"

The display will indicate 1 unit for   Number = 1.5432
every grain placed on the platform.   E = 1 (to move the decimal point
                         one place to the right)
                    d = 1 (normal setting)

8.7 Averaging Level

Averaging level compensates for vibration or excessive air currents. During operation, the balance continually takes weight readings from the weighing cell. Successive readings are then digitally processed to achieve a stabilized display. Use this submenu to specify how much processing you need to obtain stable results.

NOTE : Averaging level does not affect balance accuracy.

Select one of three averaging levels using the adjacent table as a guide.

To view or change the averaging level :
⑴ Access the AL submenu.
⑵ Press (ON TARE) splay the current setting.

⑶ Press (OFF MODE) ange the setting.

⑷ Press (ON TARE) to accept the displayed setting, when released, AL will be displayed again.

8.8 Stability Range

The stability range specifies how much a displayed weight may (unit indicator) remains ON. When displayed weight changes beyond the allowable range, the stability indicator turns OFF indicating an unstable condition. Portable Advanced balances permit you to select one of four stability ranges (in divisions) as shown in the table.

NOTE : When the RS232 interface is configured to print stable data only, the stability range also governs data output. Displayed data will only be output if it is within the selected stability range.

AVERAGING LEVEL
AL 0 Reduced stability , fastest stabilization time.
AL 1 Normal stability , normal stabilization time
AL 3 More stability , slow stabilization time.

To view or change the stability range :
⑴ Access the Stb submenu to display the current setting.
⑵ Press (ON TARE) splay the the current setting.
⑶ Press (OFF MODE) ange the setting.

⑷ Press (ON TARE) cept the displayed setting, when released, **Stb** will be displayed again.

8.9 Auto-Zero

Auto-Zero minimizes the effects of temperature changes and shift on the zero reading. By defining a threshold level in divisions, the balance maintains the zero display until the threshold is exceeded. This submenu permits you to select one of three threshold levels, or turn the feature OFF. Auto-Zero only functions when the display reads zero.

To view or change the auto-zero setting :
⑴ Access the Auto 0 submenu.
⑵ Press to display the current setting.
⑶ Press to change the setting.
⑷ Press to accept the displayed setting, when released, auto 0 will be displayed again.

.5d Smallest range: stability indicator is ON only when displayed weight is within. 5 division.
1d   Normal range.
2d   Increased range.
5d   Largest range: stability indicator is ON with displayed weight changes Up to 5 division.

8.10 Parts Counting Error Level

The parts counting error level is based on the resolution (readability) of the particular model balance and sample weight. The adjacent table lists error levels that you can choose from.

To view, change or disable the parts counting error level :

⑴ Access the **PCErr** submenu.
⑵ Press to display the current setting.
⑶ Press to change the setting.
⑷ Press to accept the displayed setting, when released, **PCErr** will be displayed again.

8.11 Auto Off

Auto Off permits the selection of either OFF, 60 seconds, 120 seconds or 180 seconds. When this function is selected, the balance will turn off if it is idle for the selected period of time (60 , 120 or 180 seconds). This feature is especially useful when the balance is operated from internal batteries. To view, change or disable the auto off feature :

⑴ Access the A．Off submenu.
⑵ Press to display the current setting.
⑶ Press to change the setting.
⑷ Press to accept the displayed setting. When is released, A．Off will be displayed again.

8.12 End

You must use End to exit the Setup menu. Changes you made in the Setup menu are only stored in memory if you use End.

To exit the Setup menu and store your settings, press when END is displayed. When is released, the balance will be returned to normal weighing operations.

9. Calibration Lock-Out Protection

Access to the Calibration menu can be disabled using the lock out switch located on the right side of the balance.

⑴ Turn the balance off and unplug the power cord.
⑵ Locate the access hole on the right side of the balance where the switch is located and remove the plug from the hole.
⑶ Using a small screwdriver, slide the switch to the front of the balance forwards or towards the rear of the balance for back.
⑷ Replace the plug in the access hole.
⑸ Plug in the power cord and turn on the balance.

10. Troubleshooting

SYMPTOM	PROBABLE CAUSE	REMEDY
No Display	Power Adapter not connected.. Batteries are dead.	Connect power adapter. Replace batteries
LO BAT Indicator	Batteries are weak	Replace batteries
Incorrect Weight Reading	Balance was not re-zeroed before weighing Balance has not been properly calibrated.	Press **ON/TARE** with no weight on the platform, then weigh item.
Calibration Procedure does not work	Incorrect weights being Used	Use correct weights.
Unable to display Weight in a particular weighing unit	Weighing unit not enabled in Setup menu.	Use Unit Selection submenu to set desired units **ON** (see Setup menu).
Unable to access **C.UNIT** in Setup menu to enter Conversion Factor	Custom Units (•) not Enabled in Setup menu, or not set to **USR**.	Use Unit Selection submenu to set Custom Units (•) to **USR**.
Balance won't store Selections made in Setup menu	END selection was not used to exit Setup menu.	You must use END to Exit Setup menu and save selections.

11. Error Codes

The following list describes the various error which can appear on the display and the suggested remedy.

Display Description

Err 0 With the platform on, this indicates the platform is too light, make it heavier properly. If this error still occurs, the sensor or the circuit board may be destroyed. The balance must be sent to the manufacturer to be serviced.

Err 1 Sample being weighed exceeds the capacity of the balance. If error occurs when the sample is within the balance capacity, balance may be incorrectly calibrated.

12. Service Information

If the Troubleshooting section does not resolve or describe your problem, you will need to contact sellers.

13. Specifications

MODEL	KLE 200	KLE 2000
oz, g, ozt, lb, ct,dwt	Yes	Yes
Parts counting	Yes	Yes
Tare	To capacity by subtraction	
Overload capacity	Capacity + 9d	
Stabilization time	3 sec	
Platter	Rectangular	
Scale	170mm (6 3/4″) × 185mm (7 1/4″) × 55mm (2 1/4″)	

14. Care

To keep the scale operating properly, the housing and platform should be kept clean and free from foreign material. If necessary, a cloth dampened with a mild detergent may be used. Keep calibration masses in a safe dry place. Unplug the AC Adapter when not in use. For long term storage, remove the batteries.

15. Warranty

Period: The KLE series scales are warranted to the original consumer purchase for a period of one year from the original purchase date.

Coverage: The KLE series scales are warranted against defects in material and workmanship.

The warranty includes parts, labor and return shipping cost to the original customer via ground freight (the freight company used is at Kilotech's discression).

This warranty does not cover batteries. Also, the warranty does not cover products damaged due to accident, abuse, misuse or any kind of power surge.

Only Kilotech and it's approved service centres are authorized to do warrantee work on Kilotech scales. Unauthorized tampering with the scale, including altering the serial number will render the warrantee null and void.

Improper packaging or other causes which are not defects to material or workmanship are not covered under this warrantee.