



ZK840 6" (150mm) round platter with draft shield



ZK840 9" x 12" (230 mm x 305 mm)

ZK840 12" x 14" (305 mm x 350 mm) with column and stack light

Fully programmable parts counter with built-in inventory control

*Technical Specification*

## DESCRIPTION

The ZK840 is a touch-screen fully programmable, configurable, high resolution Quartzell™ digital bench scale designed to meet a range of industrial applications from warehouse, production lines, kitting stations, quality assurance to laboratory environments.

Out of the box, this high precision scale is pre-programmed to be a dedicated high resolution parts counter with built-in inventory control. The ZK840 also has a wide range of dedicated applications available, including:

- › High precision general weighing
- › Counting
- › Checkweighing
- › Pick list kitting
- › Grading
- › Percentage recipe formulation
- › Filling
- › Balance and density weighing

The ZK840 is designed to work within most inventory management applications. A wide range of stored data can be accessed quickly from its fully configurable database.

### World class count accuracy

Fast and reliable, this digital parts counter / weighing platform provides outstanding count accuracy of over 99.75% for parts weighing, from as little as 10 mg

through to much heavier items. The unique modular base and indicator combination uses our robust BSQ Quartzell bench base with up to 1 billion internal count resolution and 1100% overload protection.

### Display main features

Designed to communicate a vast range of operator data on its large easy to read 5.3" x 2.75" dot graphic display, the ZK840 has been specially designed to aid the operator by providing more comprehensive graphical data representation. These on-screen images and prompts aid the operator in filling or recipe formulation mode, or on a quality control line.

Fitted with a range of time saving sampling and process routines the ZK840 can easily be adapted to meet most customer applications.

### Product connectivity

With a full range of ports, the ZK840 can be connected to a wide array of devices from PCs and printers, to scanners, remote displays, additional bases, external light stacks or memory cards. Ethernet (TCP/IP), RS232, USB, built-in I/O and external I/O relays are available, with the option to extend the number of ports for additional flexibility.

## OPERATING APPLICATIONS

<b>Applications</b>	Can be downloaded from Ztools library by a fully trained technician. All ZM615 Lua applications can also be used within the ZK840 subject to allowable keys on the ZK840 being available. If any of these keys are required, a small Lua program modification will be required to remap key location
<b>Available Applications</b>	ZK840 Counting application with built-in database and inventory control ZK840 Checkweighing with built-in database, QA messaging and average checkweighing ZK840 Grading with built-in database, 10 grading points, positive and reverse grading ZK840 Pick list kitting with built-in database, with up to 25 different parts per assembly kit ZK840 Balance, 16 units of measure, GLP, percentage weighing, percentage recipe mixing, density formulation, high resolution mode.
<b>Display Screens</b>	Display screens have been designed to be simple and easy to follow with step by step prompts Visual display aids under over and accept can be set to graphically show when the actual counted parts targets is reached



*Average Checkweighing*



*Checkweighing*



*Counting*



*Pick List Kitting*



*Grading*



*Balance*

<b>Operator Keys</b>	Subject to configuration, basic keys being: zero, tare, print, units of measure Advanced keys: recall, operator I.D., setup, abort
<b>Database Storage</b>	Will hold around 1000 typical PLUs internally, or around 3500 PLUs if installed with a Micro SD card. However turning on data fields other than the standard ones will reduce the amount of internal PLU storage space. External databases are available with the use of PLU Lookup which will allow multiple scales to easily communicate with a centrally PC stored database. Ideal for inventory control counting scale applications

**Database Fields** ZK840 Database has been designed to be very flexible and can be used with a wide range of applications from counting, checkweighing to grading and recipe formulation  
Designed with hundreds of predefined data fields that can be turned on or off subject to the data being stored

**Most commonly used data fields (subject to application)**

- › PLU Part number - Alphanumeric (20 characters)
- › Description (3 lines) - Alphanumeric (40 characters)
- › Lot /location
- › Piece weight
- › Tare weight
- › Stock on hand
- › Target weight
- › Upper and lower count limit
- › Upper and lower weight limit
- › Grading points
- › Assembly PLUs

<b>Security Control</b>	Database is password protected to limit access and control by the operator
<b>Database Backup</b>	Designed to allow easy database backup and retrieval by means of FTP or by using a USB memory stick in one of the side USB ports. Backup is password protected
<b>Programmable Language</b>	Avery Weigh-Tronix Lua ( <i>all applications are fully configurable</i> )
<b>Base Compatibility</b>	Supplied connected to one BSQ base as standard ( <i>local base</i> )
<b>Maximum Number of Bases Allowed</b>	Allowed five ( <i>one local BSQ base, two remote BSQ and two analog platforms</i> ). Can link to a second and third BSQ by utilizing each RS232 port Can also link to two analog remote bases by installing two optional 5 VDC excitation analog base cards within the ZK840 indicator ( <i>each analog card can run up to six 350 ohm load cells</i> ) All bases can run independently to each other, so if one fails the remaining bases will continue to operate
<b>Units of Measure</b>	Four active choices ( <i>Kilograms, Ounce, Gram, Pounds, Pound/Ounce, Custom</i> )
<b>Base Construction</b>	High resolution Quartzzell mounted inside a robust aluminum die-cast clamshell BSQ base with 1100% overload and shock load protection ZK840 indicator is protected inside a tough ABS indicator housing that is most commonly mounted to the front of the BSQ base. This ZK840 indicator can also be easily removed for wall, deck or column mounting and will connect to the same indicator brackets as used on the ZK830. Maximum distance for the indicator to work away from the base is 50 ft (15m)
<b>Indicator Display</b>	Touch screen with protective screen cover. Display type is an Improved Super Twisted Nematic (ISTN) Graphic Display 5.3" x 2.75" ( 135mm x 70mm) : the green illuminated with black background 320 x 160 pixel display provides wide viewing angles and high brightness. Pre-defined or customer operator messaging, user prompts and graphics can be displayed on screen. A mode selection in supervisor mode allows the image to be displayed in reverse for applications that would benefit from dark characters with a clear/light contrasted background



<b>Operator Keys</b>	ZK840 uses a touch screen display with six metal domed keys with audible feedback ( <i>Sample, Tare, Zero, Setup and two custom keys</i> )
<b>Indicator to Base Communications</b>	Local BSQ base connection: one dedicated RS232 connection using a keyed RJ45 connector found on the rear of the ZK840 indicator Second and third BSQ bases: to be wired in through the RS232 communication ports ( <i>found on the rear of the ZK840 indicator</i> ) (SMA, 115200, eight data bits, none, one stop bit) Remote analog base: wired into one of the analog base connectors. Requires optional 5V excitation card fitting per base
<b>BSQ Base Port</b>	One dedicated RJ45 keyed socket for connecting ZK840 indicator to local BSQ base
<b>Power Jack</b>	Two 12-36V DC power socket found on the rear of the BSQ base or on the rear of the ZK840 indicator. This allows the base or indicator to be powered from any 12-36V DC power source

<b>Power Options</b>	100V to 240V AC 50/60 Hz switch mode power supply mounted to the rear of the base Base can be powered using either a 12 to 36 VDC power jack on the rear of the base or to the rear of the indicator
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<b>Battery Power Option</b>	NiMH rechargeable battery option to give up to nine hours of continuous usage or ZQ remote battery option gives up to eleven hours continuous usage
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## ZK840 CONNECTIVITY OPTIONS

<b>Remote Inputs</b>	Three TTL or voltage free logic level inputs can be received for basic key functions or application program events ( <i>up to 128 extra I/O by using the external expansion box / cards with external I/O cards and SSCU8 boxes</i> )
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<b>Standard Outputs</b>	Three outputs can be used for system variable set points or in combination with application program events ( <i>up to 128 extra I/O by using the external expansion box or cards with external I/O cards and SSCU8 boxes</i> )
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<b>Serial Ports</b>	(2) Two serial ports: <ul style="list-style-type: none"> <li>› Comm 1 RS232 full duplex with handshake</li> <li>› Comm 2 RS232 full duplex</li> </ul> Manual and auto print function Printer and scanner can share one RS232 port, with a custom application <ul style="list-style-type: none"> <li>› Supports SMA, ENQ and NCI command response protocols and broadcast</li> <li>› Supports BSQ digital bench bases</li> <li>› Supports external expansion box for allowing other external option cards</li> </ul>
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<b>USB /VCP (device)</b>	PC Connection ( <i>uses one of the RS232 ports</i> )
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<b>USB Host</b>	(2) Two USB host ports ( <i>found on the side of the indicator</i> ) can be used for: <ul style="list-style-type: none"> <li>› USB flash memory</li> <li>› Remote USB keyboard</li> <li>› Scanner</li> <li>› Printer</li> </ul>
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<b>Ethernet</b>	The Ethernet port can be configured to support ten independent devices. It supports DHCP, UDP Sockets, TCP/IP ( <i>client or server</i> ), embedded web server, email, SMA, NCI, FTP, ENQ and Broadcast. Fieldbus Ethernet/IP™ and Modbus- TCP
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<b>Expanded Memory</b>	Internal expanded data storage can hold up to 4GB extra storage data, ZK840 has one Micro SD slot that is compatible with most Micro SD cards from 4GB to 32GB ideal for: <ul style="list-style-type: none"> <li>› Database expansion</li> <li>› USB port expanded buffer space</li> <li>› Audit trail data storage capability</li> <li>› Can be used for storing a wide range of Distributor installed applications</li> </ul>
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<b>Analog Scale Ports</b>	Two analog base ports ( <i>green connector</i> ) only active when optional 5V analog cards are fitted
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<b>Internal Options Cards</b>	Maximum of two option cards can be installed inside the ZK840 indicator Options are as follows: <ul style="list-style-type: none"> <li>› Scale Input 5 VDC excitation card (<i>maximum two</i>)</li> <li>› Wireless (Ethernet) internal kit: 802.11b/g wireless data communications kit with antenna</li> </ul>
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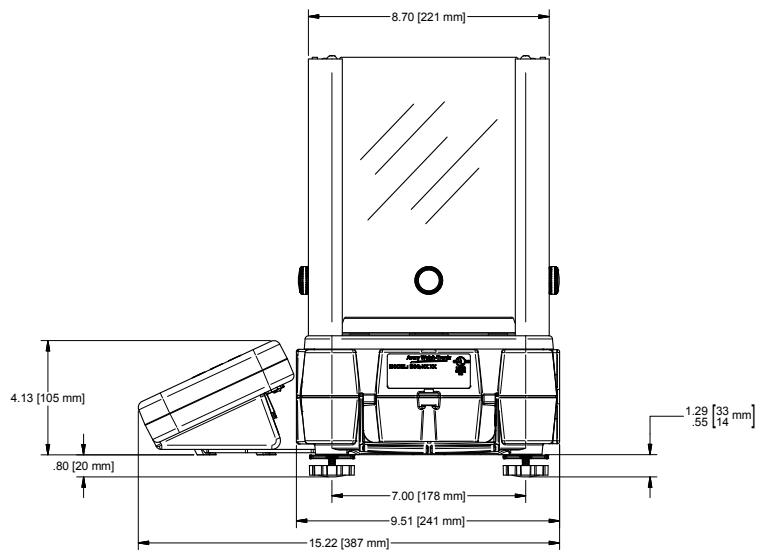
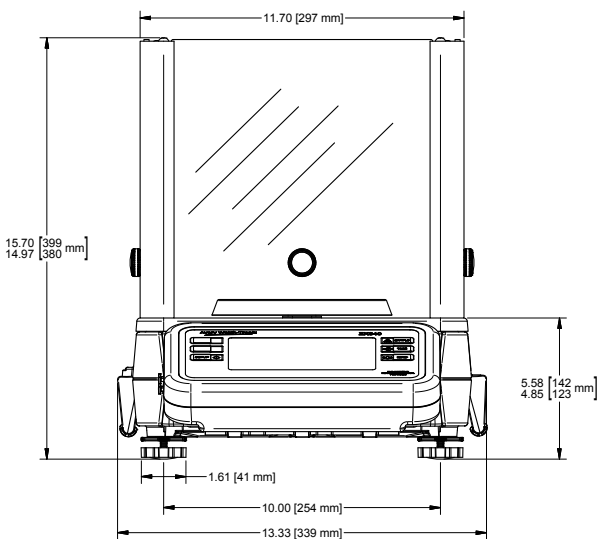
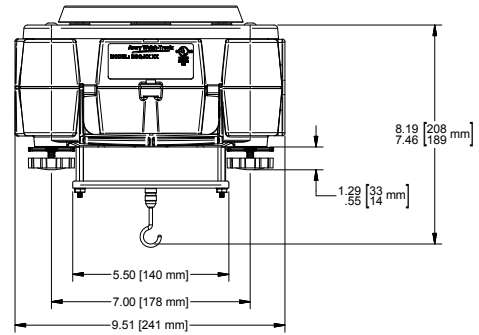
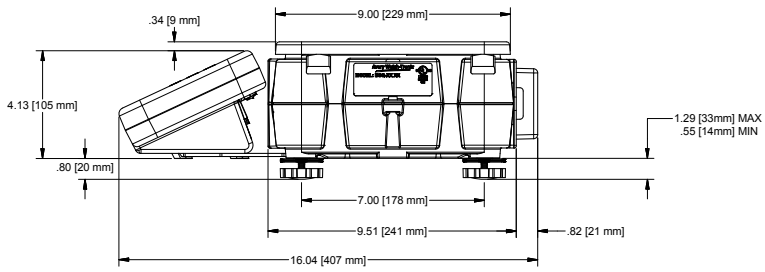
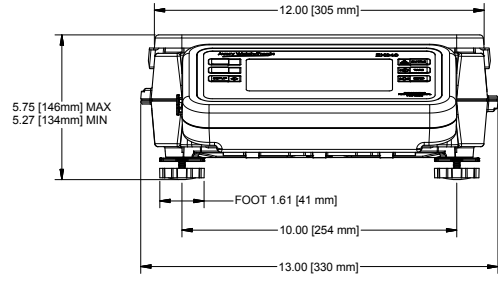
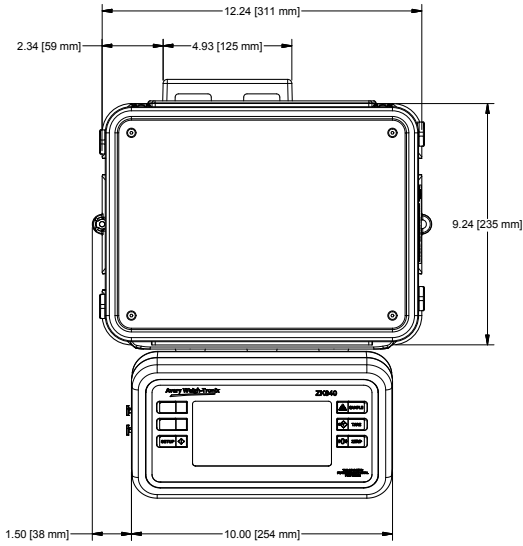
<b>External Option Expansion box /card</b>	With the use of an RS232 external option expansion card / box this now allows up to two extra option cards to be installed ( <i>each external option expansion box /card will use up 1 RS232 port</i> ) <ul style="list-style-type: none"> <li>› Analog output kit</li> <li>› Current Loop/RS485/RS422 kit</li> <li>› USB device kit</li> <li>› External I/O interface kit (<i>only one I/O card per expansion card / box, must be on top</i>)</li> <li>› DC Output card (<i>4 Output optically isolated relays 3-60 VDC @ 2A</i>)</li> <li>› DC Input card (<i>4 Inputs 4-30 VDC</i>)</li> <li>› AC Output card (<i>4 Output optically isolated relays 20-240 VAC @ 1A</i>)</li> <li>› AC Input card (<i>4 Inputs 120-240 VAC</i>)</li> </ul>
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<b>Other Options</b>	<ul style="list-style-type: none"> <li>› USB keyboards</li> <li>› Draft shield (<i>1-10 lb /1-5kg only</i>)</li> <li>› Printer</li> <li>› Scanners</li> <li>› Underhook (<i>1-10 lb /1-5kg only</i>)</li> <li>› Columns 15" &amp; 23" high</li> <li>› Desk and wall brackets</li> <li>› Stack lights</li> <li>› Ball top (<i>12" x14" base only</i>)</li> <li>› Battery option</li> <li>› ZM-OPTO Provides 3 inputs and/or 3 outputs, external</li> <li>› OPTO22 G4 interface modules</li> <li>› 64G Micro SD card</li> </ul>
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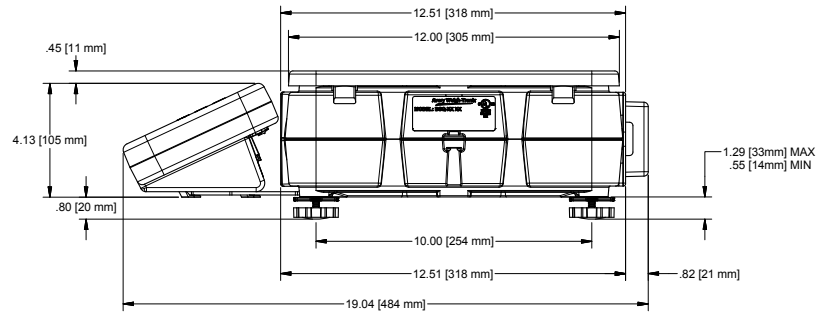
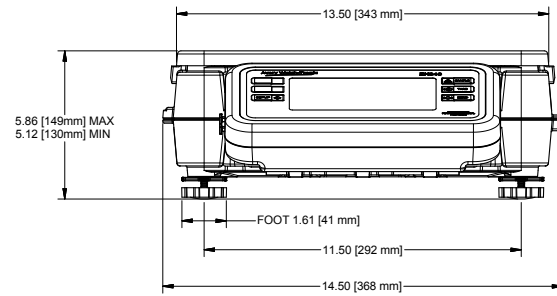
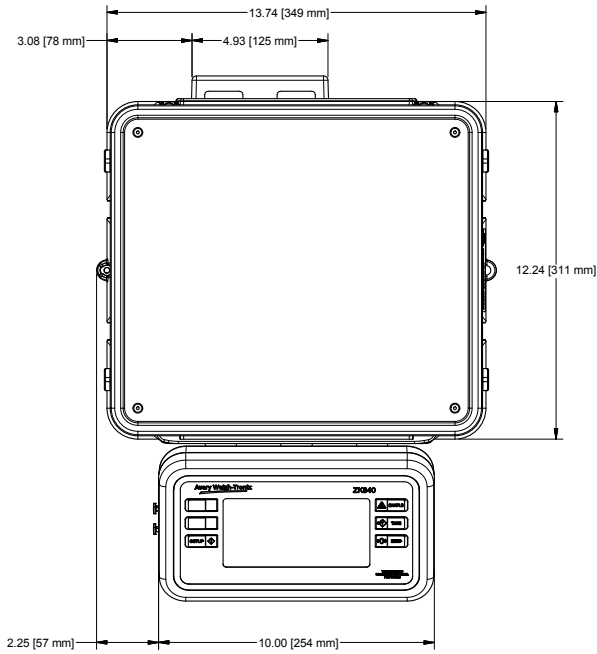
## MAIN CAPACITIES AND RESOLUTIONS AVAILABLE

Weigh Platter Size	Non Legal for Trade 100,000d	Legal for Trade 10,000d NTEP	Non Legal for Trade 100,000d	Legal for Trade OIML 10,000d
6" dia (156mm)	1 lb x 0.00001 lb	1 lb x 0.0001 lb	500 g x 0.005 g	
6" dia (156mm)	2 lb x 0.00002 lb	2 lb x 0.0002 lb	1000 g x 0.01 g	1000 g x 0.1 g
6" dia (156mm)	5 lb x 0.00005 lb	5 lb x 0.0005 lb	2000 g x 0.02 g	2000 g x 0.2 g
6" dia (156mm)	10 lb x 0.0001 lb	10 lb x 0.001 lb	5000 g x 0.05 g	5000 g x 0.5 g
9" x 12" or 12" x 14" (230 x 305 or 305 x 350mm)	25 lb x 0.0002 lb	20 lb x 0.002 lb	10 kg x 0.0001 kg	10 kg x 0.001 kg
9" x 12" or 12" x 14" (230 x 305 or 305 x 350mm)	50 lb x 0.0005 lb	50 lb x 0.005 lb	25 kg x 0.0002 kg	20 kg x 0.002 kg
9" x 12" or 12" x 14" (230 x 305 or 305 x 350mm)	70 lb x 0.001 lb	70 lb x 0.01 lb	35 kg x 0.0005 kg	35 kg x 0.005 kg
12" x 14" (305 x 350mm)	100 lb x 0.001 lb	100 lb x 0.01 lb	50 kg x 0.0005 kg	50 kg x 0.005 kg
12" x 14" (305 x 350mm)	175 lb x 0.002 lb	175 lb x 0.02 lb	80 kg x 0.001 kg	80 kg x 0.01 kg
<b>Base Size and Capacity</b>	1 lb to 2 lb (500 g to 1 kg) Max 9" x 12" with 6"(156mm) diameter weight platter 2 lb to 10 lb (1 kg to 5 kg) Max 9" x 12" with 6"(156mm) diameter weight platter 10 lb to 70 lb (5 kg to 35 kg) Max 9" x 12"(230mm x 305mm) 10 lb to 70 lb (5 kg to 35 kg) Max 12" x 14"(305mm x 350mm) 70 lb to 175 lb (35 kg to 80 kg) Max 12" x 14"(305mm x 350mm)			
<b>Digital Filtering</b>	Three digital Harmonizer™ filters stored within the indicator with adjustable average, constant and threshold filter settings			
<b>Time and Date</b>	Battery backed up time/date/year (12 hour or 24 hour format)			
<b>Calibration</b>	Up to 10 points of calibration, stored within the ZK840 indicator			
<b>Display Rate</b>	100Hz			
<b>Non Legal for Trade Resolution</b>	100,000 divisions center of pan, stable room temperature Up to three range multi interval or multi range can be configured for non legal for trade applications			
<b>Legal for Trade Resolution</b>	10,000 divisions class III (single or 3 multi interval or Multi range ) Remote analog base NTEP 10,000d (EC/OIML 6000d)			
<b>Meteorology Data</b>	Stored within the ZK840 indicator			
<b>Readability</b>	Can be set up to display up to 3,500,000 divisions			
<b>Internal Resolution</b>	1 billion counts (1,000,000,000 internal counts)			
<b>Load cell Technology</b>	High accuracy digital Quartzell transducer 1100% overload protection			
<b>Corner Loading</b>	Spring breakaway system is activated at 120% full capacity or 60% corner only load			
<b>Recommended Minimum Piece Weight by Base Type (Sample Size of 50)</b>	2 lb (1kg) min piece weight : 0.000004 lb (2 mg) min sample weight: 0.00022 lb (0.1 g) 10 lb (5kg) min piece weight : 0.000022 lb (10 mg) min sample weight: 0.0011 lb (0.5 g) 70 lb (35kg) min piece weight : 0.000154 lb (70 mg) min sample weight: 0.0077 lb (3.5 g) 175 lb (80kg) min piece weight: 0.000352 lb (160 mg) min sample weight: 0.0176 lb (8 g)			
<b>Count Accuracy</b>	Fully configurable up to 99.5% subject to environment and component size being sampled			
<b>Filter Setting</b>	Controlled within the ZK830 indicator			
<b>Creep</b>	0.001% of 100,000 divisions over a 30 minute period or 0.0005% of 200,000 divisions over a five minute timespan			
<b>Minimum Recommended Non Verifiable Division Size</b>	0.000001 lb (0.0005 g) for the 2 lb (1 kg) BSQ base 0.000005 lb (0.002 g) for the 10 lb (5 kg) BSQ base 0.00002 lb (0.01 g) for the 70 lb (35 kg) BSQ base 0.00005 lb (0.02 g) for the 175 lb (80 kg) BSQ base			
<b>Division Size (Class III)</b>	0.0005 lb (0.1 g) for the 2 lb (1 kg) BSQ base (10,000d approved) 0.00116 lb (0.5 g) for the 10 lb (5 kg) BSQ base (10,000d approved) 0.002 lb (1 g) for the 70 lb (35 kg) BSQ base (10,000d approved) 0.005 lb (2 g) for the 175 lb (80 kg) BSQ base (10,000d approved)			
<b>IP Rating</b>	Designed to meet IP42			
<b>Carry Handles</b>	Carry handles allow this scale base to be easily carried around			
<b>Operating Temperature</b>	41° F to 104° F / +5° C to 40° C (approvals) at 10 to 90% humidity -4° F to 140° F / -20° C to 60° C (industrial) at 10 to 90% humidity			
<b>Foot Adjustment</b>	Water resistant anti-slip rubber foot with finger grip locking ring to allow up to 0.75" (19 mm) height adjustment			

DIMENSIONS 9" x 12"



## DIMENSIONS 12" x 14"



### Approvals

NTEP 10,000d single range of 3 range MI /MR  
 Measurement Canada 10,000d  
 OIML 10,000d, EC 10,000d single range\*  
 UL/c-UL-US, CE, RoHs, RCM approved\*  
 \*pending



Measurement\*  
 Canada Approved



**Avery Weigh-Tronix**

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