ARCA

CM18

Next generation cash recycling

Freedom and Security

ARCA

Mission Statement

In everything we do, we choose to be the best.

We always provide the best solutions to our customers.

We foster communities where we value each other, inspiring each of us to become our best.

At ARCA, cash handling is all we do.

We have a unique perspective on cash automation and are a leading supplier of solutions for financial institutions. An American owned and run company, ARCA was a pioneer in first bringing cash recycling technology to the U.S. market in 2002.

Today, ARCA provides the largest selection of cash handling devices of any manufacturer. We provide cash automation technologies to customers in over 30 countries and support these devices with world-class service from our headquarters near the Research Triangle in North Carolina.

ARCA makes life better by securing and simplifying transactions around the world. Although we are a technology company, we see beyond the hardware and software to the real problems that we help people solve.

- 100% physical protection of cash

- UL291 certified safes

- Controlled user access

- Secured communications

- Programable access times

- Silent alarms

- Remote monitoring and updates

Teller Cash Recyclers, more simply known as TCRs, started to gain real popularity with banks during the latter part of the Nineties.

The TCR is an automated, fully certified safe containing all the technology required to process banknotes. It is able to identify and authenticate banknotes, sort specific notes to secured containers and provide banking applications with auditable detail for each transaction.

Removing the need to count and verify banknotes means that the teller can dedicate more of their attention to their customer.

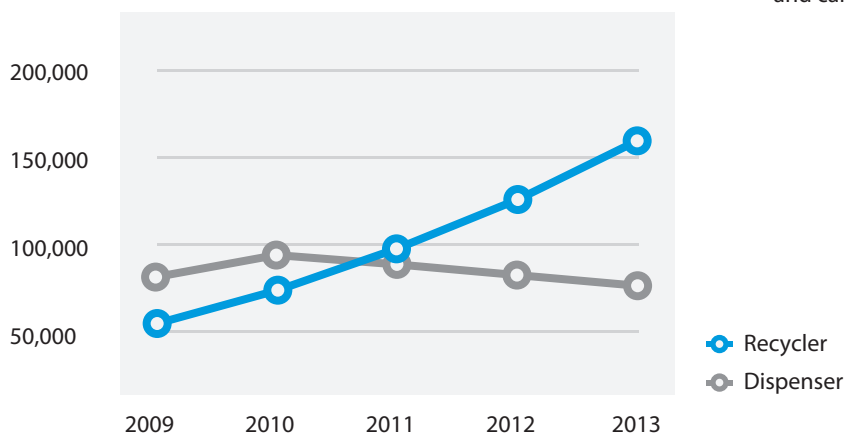**The CM18 represents the most advanced TCR available today.**

Secure storage of all notes within the CM18 is achieved through a range of safe types, ensuring all insurance requirements are met and covering the major international certifications of UL and CEN.

Configurable access controls ensure that only authorized users can communicate with the device, as defined by a supervisor, or designated member of staff.

Communications between Host and TCR may be encrypted using standard protocols. Further levels of security are provided by using time delays for cash dispenses, with variable length delays based on the value of the required dispense, and another option which restricts machine operations to defined working hours.

Alarm functions related to attempted robberies or physical attacks on the safe are completely programable and cannot be tampered with from outside the safe.

Estimated TCR market worldwide

	2009	2010	2011	2012	2013
200,000					
150,000					
100,000					
50,000					

Recycler
Dispenser

Source: RBR

A solution for every location

The compact size and flexible design of the CM18 ensures that it will fit into the vast majority of teller desk configurations with little or no change.

Single teller configuration

The operator works in a small area with the TCR situated under a desk. The CM18 can be supplied with either a left or right hand hinged door — enabling the device to be situated next to a wall.
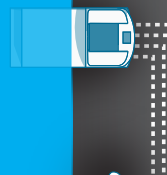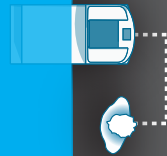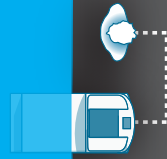
Dual teller configuration

Two operators work in an open space, sharing the TCR. The device performs transactions for both operators, identifying clearly which operator has control of the unit via illuminated indicators.

Multi-user configuration (Vault Mode)

The TCR is shared by several users. Transactions are accepted and stored in the device and are executed when the operator identifies themselves using their access credentials.
The CM18 can be located immediately behind the teller positions or further away in a more secure location.

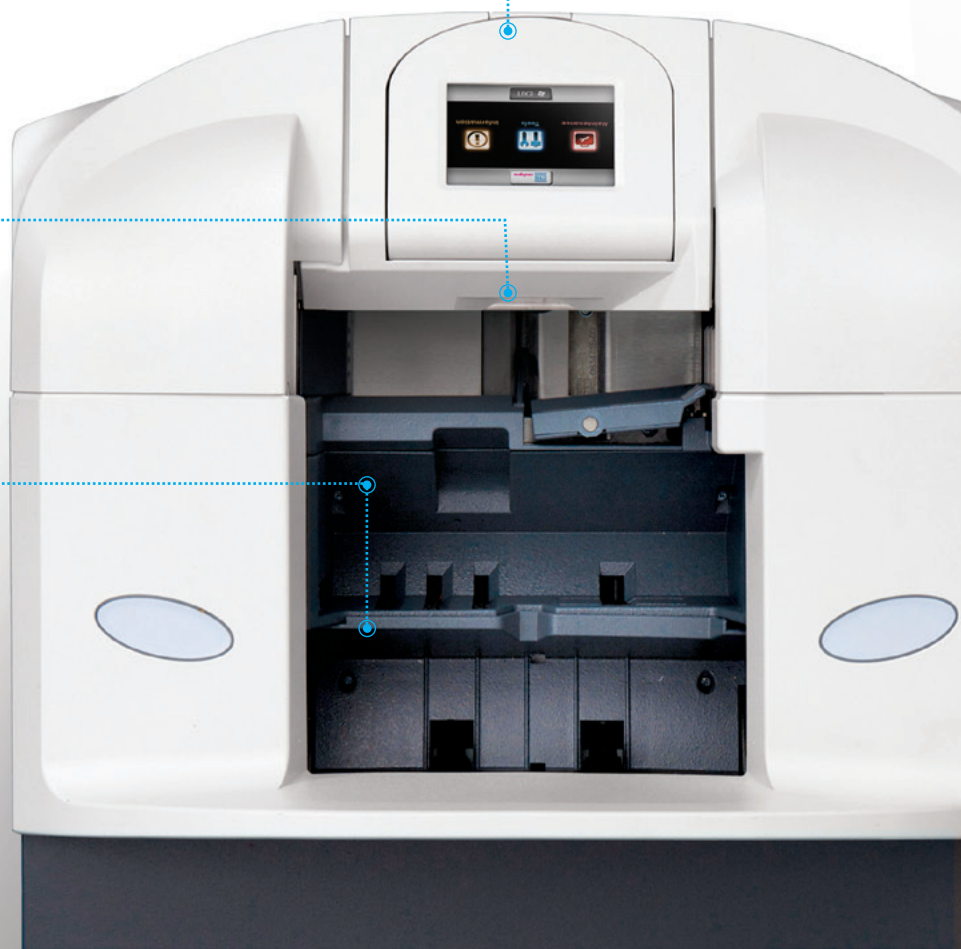# Designed and developed to offer unprecedented levels of integration

The principle design objective behind the CM18 was to create an innovative device that would **integrate seamlessly into any modern cash teller environment**, performing the counting, depositing and dispensing banknotes in the simplest and most straight-forward of manners, while increasing security at the teller position.

The CM18 features a **Touch Screen Interface** that simplifies the use of the device.
The introduction of the Touch Screen Interface - using **simple icons, colors and graphics** - permits complex cash functions to be performed efficiently and accurately with just a few key presses and without the need to implement this functionality at the teller application level.

The input slot is situated adjacent to the Touch Screen Interface - the most ergonomic layout for use by a teller. Bundles of up to 200 banknotes at a time can be deposited, enabling most cash transactions to be completed in a single session.

The CM18 features **two output slots**. This feature allows verified and unverified banknotes to be identified separately. They are also used during the validation, sorting and counting functions.

Putting Ergonomics and Design to Work

A general view

Devices designed to help operators perform a task must be both **simple to use and simple to control.**

A device that is comfortable in daily use creates a feeling of confidence, security and professionalism that is required to deliver banking services.

continuità delle superfici con linee decise

cambiano tangenza da negativi a positivi

ergonomia d'utilizzo

[monitor touch inclinabile]

Ergonomic features of CM18

By positioning the touch screen next to the three cash slots, thus controlling or limiting shoulder movements, the CM18 design reduces fatigue from prolonged or extensive use.
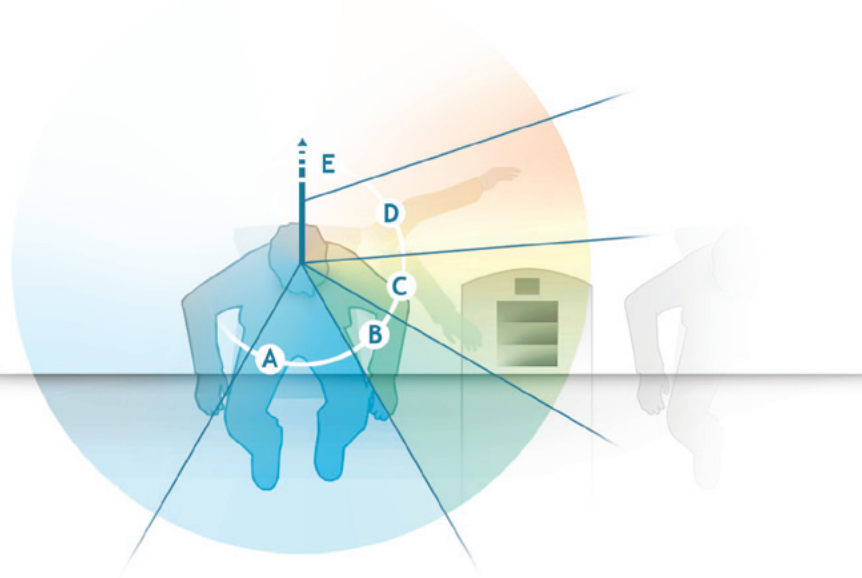
This centralized positioning of screen and slots also enables the device's status to be checked with a **single look in one direction** – again the most effective and comfortable solution.

It is essential that any repeated, bodily movement can be executed with **efficiency and ease**. A device's operational space should also enable easy access to frequently used areas.

An example of this is seen in the CM18's design where the operator uses no more than a 90-degree shoulder rotation.

90°

Operator-machine interaction zones

A Zone covered only by visual field
B Visual field with neck rotation
C Visual field with neck and shoulder rotation
D Visual field with neck and whole body rotation
E Visual field with neck and whole body rotation and whole body movement

Only 20 inches of space is
required to access all cassettes

Intelligence Included as Standard

Using the integrated Microsoft Windows CE based processor, the CM18 can perform many useful functions locally, without having to interact with the main teller application.

Banknote counting and validation, note fitness sorting and management of foreign currencies that the unit does not have storage capacity for, are only some of the operations available. Detailed counting and note type information is displayed on the device's color display and stored in the internal journal file.

Video Support for All

The Touch Screen Interface is designed to assist the operator by providing simple/clear messages, instructions and even video clips that offer guidance on the device's functions. Using a secure log-in, a supervisor can manage users, control access permissions, program permissible operation times and set delays for banknote delivery.

The Touch Screen Interface also helps service technicians, showing performance data, allowing troubleshooting and availability analysis to be performed, in addition to providing on-board diagnostic test functions.

Smallest Service Footprint

The CM18 has one of the industry's smallest operational and service footprints which means it can be installed in the smallest of branch or office space without the need for any refurbishment. This saves significantly on installation costs.
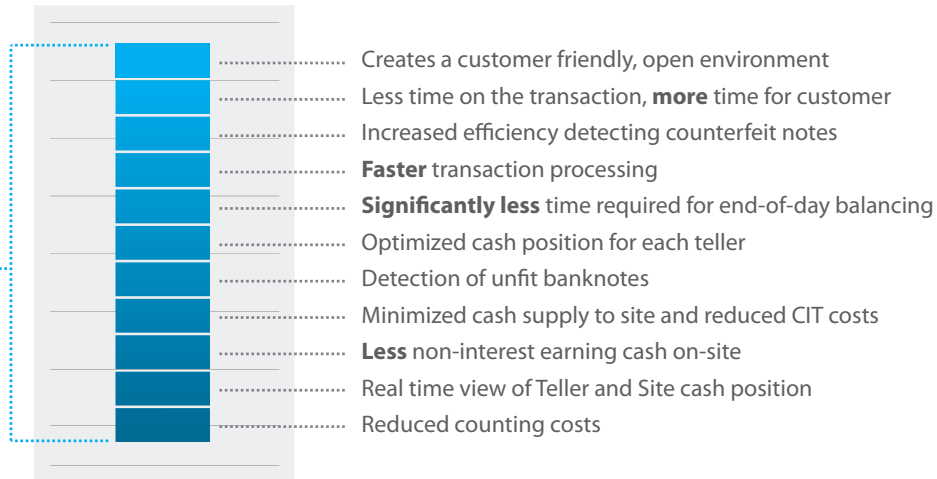
The TCR Revolution

One major benefit of the CM18 TCR is that rather than focusing on the manual process of handling cash, the teller can give their **full attention to their customer**.

This customer-friendly environment, with the tellers able to engage more with their client, creates a conducive atmosphere for building customer relationships leading to **improved customer loyalty and satisfaction**. This can also provide an ideal opportunity to market other services.

Analysing the revolution

Advantages and benefits of deploying a CM18 TCR

Creates a customer friendly, open environment

Less time on the transaction, **more** time for customer

Increased efficiency detecting counterfeit notes

Faster transaction processing

Significantly less time required for end-of-day balancing

Optimized cash position for each teller

Detection of unfit banknotes

Minimized cash supply to site and reduced CIT costs

Less non-interest earning cash on-site

Real time view of Teller and Site cash position

Reduced counting costs

Branches equipped with TCRs register significant **increase in product sales** by tellers, increased security for branch cash holdings and improved branch staff protection.

The secure nature of the CM18 safe **reduces the risk of robbery** as the teller has only restricted access to cash. The CM18 can be programed with a predefined 'duress' dispense which also informs the security system that a theft is in progress.

9

Identifying Unfit Banknotes

To combat the circulation of counterfeit notes, the European Central Bank, the Russian Central Bank, the South African Reserve Bank and many other national central banks have requested member Commercial Banks to **remove unfit notes from circulation**. Many other central bank agencies are also considering mandating this process, or have already planned it.

The terms of reference for detecting counterfeits and selecting notes that are no longer suitable for circulation, as set by the relevant Central Bank agency, defines when a banknote is considered 'unfit'.

Many of the controls for verifying genuine or unfit notes are **very complex** even for experienced cashiers. The CM18 is regularly certified by the European Central Bank as well as all other central banks that have mandated similar procedures.

The CM18 uses **advanced note processing and recognition technology** to perform all the checks required for detecting unfit banknotes, processing up to five notes per second.

In summary:

- Satisfies Central Bank Standards

- Reduce transport costs

- Reduce counting costs

- Allows loading of ATMs with "fit" notes

During deposit operations, **unfit banknotes are segregated** into a storage cassette from which they are dispensed only when the "Discharge Unfit Notes" command is given and **without the need for the safe to be opened**.

The CM18 also has the capacity to record the details of banknotes handled, producing conformance reports when requested by the authorities.
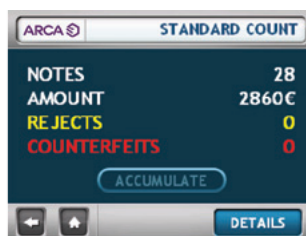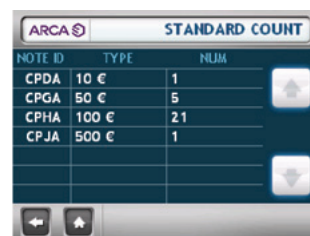
Suspect Banknotes
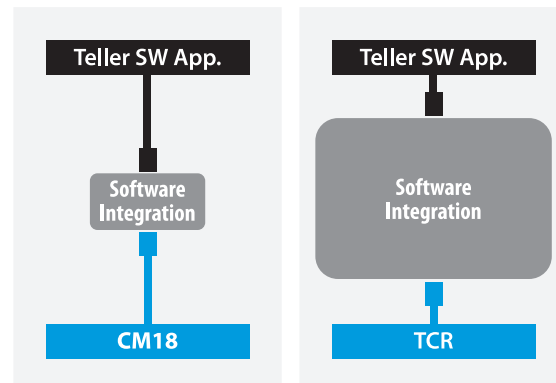

Counting Results

Counting Details

The CM18 allows the results of operations such as counting or depositing to be verified immediately, using the CM18's Touch Screen Interface. This permits banknote quality to be controlled in detail, counterfeits to be detected and uniquely identified, the number of denominations to be counted and the total amount of the transaction to be calculated automatically.

Integration Activities

The correct integration of a TCR with the teller SW application is essential to ensure correct cash desk operation and accountability.

Compared to previous generations of TCRs, the CM18 **simplifies** this by using an integrated Microsoft Windows CE processor that has a huge range of built in cash handling and diagnostic functions, thus **removing the need** to implement these at the Teller Application level.

Examples of functions that are handled on the Touch Screen Interface without implementing them in the teller SW application are:

- Unit configuration
- Counting
- Sorting
- Operator guidance (with video clips)
- Error handling
- Banknote analysis

The CM18 is compatible with many middleware platforms and multi-vendor software solutions, including:

CashXpress CX20F - Finsolint
INvolve - Nexus Software
Lutzwolf Device Controll - Lutzwolf
S4 - CFM
Universal Cash Management (UCM) - Compuflex
VaultWare - Compuflex
CashWare - Benchmark
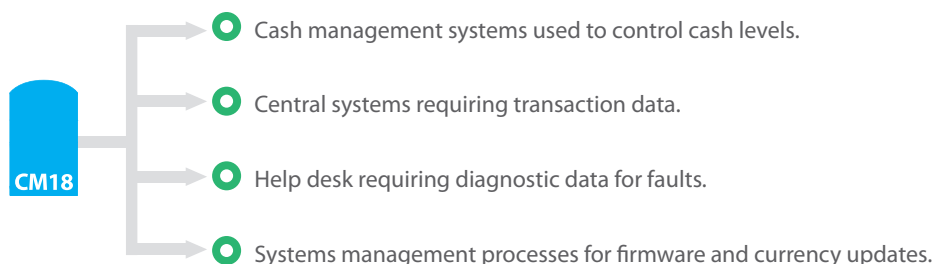& major teller software applications

Connecting to all the right places…

One of the innovative functions of the CM18 is its ability to **communicate over multiple channels** concurrently — connecting to several systems at once.
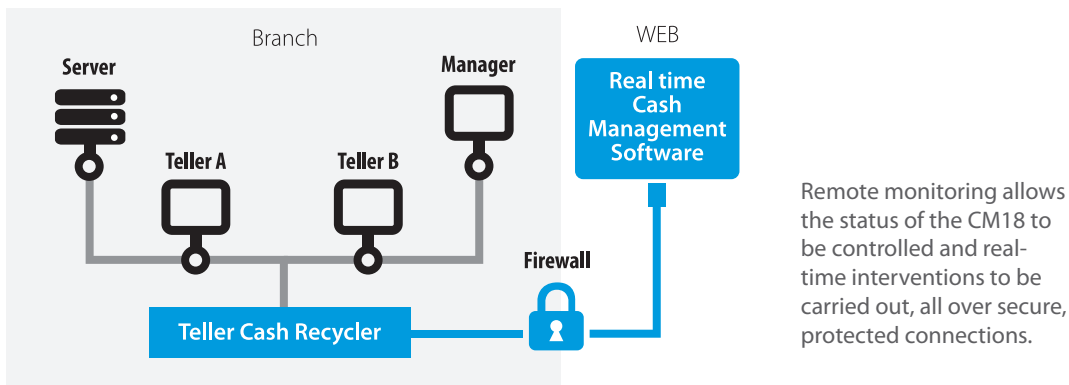
One communication channel is used internally by the CM18 for interacting with the main Teller Application and is used by the teller operators and their supervisors for the handling of cash deposits and withdrawals.

At the same time, interaction with the CM18 on-board system is completely separated from the main teller application; for example, specific denominations can be restricted to peak times, directly on the device, without reconfiguring the application.

CM18 Multichannel Communications

CM18

- Cash management systems used to control cash levels.
- Central systems requiring transaction data.
- Help desk requiring diagnostic data for faults.
- Systems management processes for firmware and currency updates.

CM18 Data Flow

Branch

WEB

Server

Manager

Teller A

Teller B

Real time Cash Management Software

Firewall

Teller Cash Recycler

Remote monitoring allows the status of the CM18 to be controlled and real-time interventions to be carried out, all over secure, protected connections.

Flexibility and Capacity

While the CM18 fits seamlessly under any standard desk, the CM18T is designed for under-the-counter and standing environments while maintaining the same reduced footprint.

Additionally, the CM18T offers a scalable capacity that can grow from 8 to 12 recycling modules at any time. This is achieved simply by inserting more cassettes.
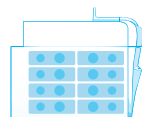
Since the volume of banknotes in circulation varies by denomination, the capacity of cash recyclers is often compromised as some cassettes fill up faster than others.

In the new CM18 and CM18T the flexible configuration options address the issue, allowing the cassette capacity to be optimized:
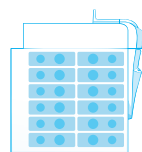
"Virtual cassettes" enable the distribution of one denomination across several recycling modules without impacting the application software.

"Balanced cash handling" enables the even distribution of notes among these modules. This ensures that in the unlikely event of failure of one of the modules, cash operations are unaffected.
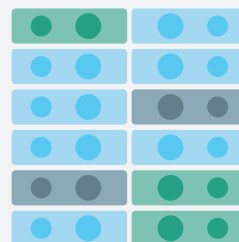
CM18

CM18t

In many countries, or border regions, where two or more currencies are in circulation a larger volume of notes may be managed. **The CM18T, with its greater capacity, is the ideal solution because it is possible to use up to 12 recycling modules.**

The CM18 can be configured for optimum efficiency. Capacity can range from 500 to 3000 notes per denomination, based on the needs of each location.

With no wasted space, the CM18 suits every environment and has the highest flexible capacity in the market.

Recycling modules can be configured in many different ways: single-denomination, multi-denomination, multi-nation, unfit notes (not recyclable), overflow. Easily controlled via the application software, the configuration can be changed as required, depending on the day of the week or month.

Easy Integration

The flexible nature of the CM18, with its compact size and small service footprint, is demonstrated in the images on these pages. In every one of these situations, the CM18 has been installed without requiring any expensive changes, such as raised desks or movement of walls or partitions.

With its unique combination of functions, ergonomics, touch screen interface, easy integration and security features, the CM18 has enabled customers to deploy TCR technology in locations previously thought not possible.

Single operator or shared, the CM18 can be positioned under a desk, to the left or right, or adjacent to a desk, again on either side. The flexible design of the CM18 can be integrated into any known banking hall environment with the minimum of investment.

CM18

The facts behind the next generation in cash recycling

Remote Management Options

Monitoring functions for optimized cash management. Management of device faults. Ability to program and configure unit.
Proactive management of Preventive Maintenance visits.
Online updating of firmware and banknote templates over secure connections.

Touch Screen Interface

Integrated touch screen interface. The purpose built interface allows the operator to perform offline operations and provides help using video and images. Simplifies both First and Second Line Maintenance tasks and the resolution of faults. Provides the operator with the ability to access the device's functions without consulting the user manual.

Physical and Logical Security

UL291, CEN L, CEN IIIv safes with standard options of floor anchorage. Alarm sensors and a selection of secure locks. Safe door opening can be software controlled.
Options of secure communications software (TCP/IP V6-IPSEC) through dedicated Windows CE board. Option of left or right side hinge on unit door.

Recycling - Deposits and Dispenses
• Deposit/dispense transactions in batches of up to 200 notes (without limits per transaction)
• Note bundles can contain any supported currency/denomination in any order/orientation

Counting and Sorting
Simple note count - Standard note count - Denomination fit note sore - ATM count
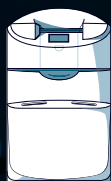
Validation and Fitness Sorting
• Full image sensors for Visible, UV & IR light plus magnetic and ultra sonic sensors
• Reader can store up to 16 currency definitions of which 4 can be active
• Reader can store up to 32 denomination definitions per currency

Capacity
• Standard CM18: 8 recycling cassettes, up to 500 notes per cassette (4000 notes total)
• CM18T: 8, 10 or 12 recycling cassettes, up to 500 notes per cassette (6000 notes total)

Connections
• RS232, USB 2.0 or TCP/IP for application communications
• RS232 for coin and optional peripherals
• USB 2.0 or TCP/IP for service updates / service monitoring
• Optional embedded XP PC enabling integral teller application support

CM18 - UL291
Width: 17.32 in / 440 mm
Depth: 31.50 in / 800 mm
Height: 26.46 in / 672 mm
Weight: 696.66 lbs / 316 kg

CM18T - UL291
Width: 17.32 in / 440 mm
Depth: 31.50 in / 800 mm
Height: 37.09 in / 942 mm
Weight: 877.44 lbs / 398 kg

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