

PRODUCT CATALOGUE

Electronic Shelf Labels

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Electronic Shelf Labels

SOLUM
Solution provider.

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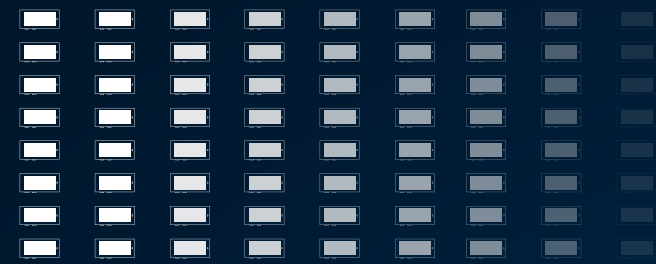
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Digitizing the Retail and Industrial Market with Industry-Leading ESL Solutions since 2011.

70+

Million ESLs



in

6000+

Stores across **35+** countries



100



million

target ESLs shipped by 2020

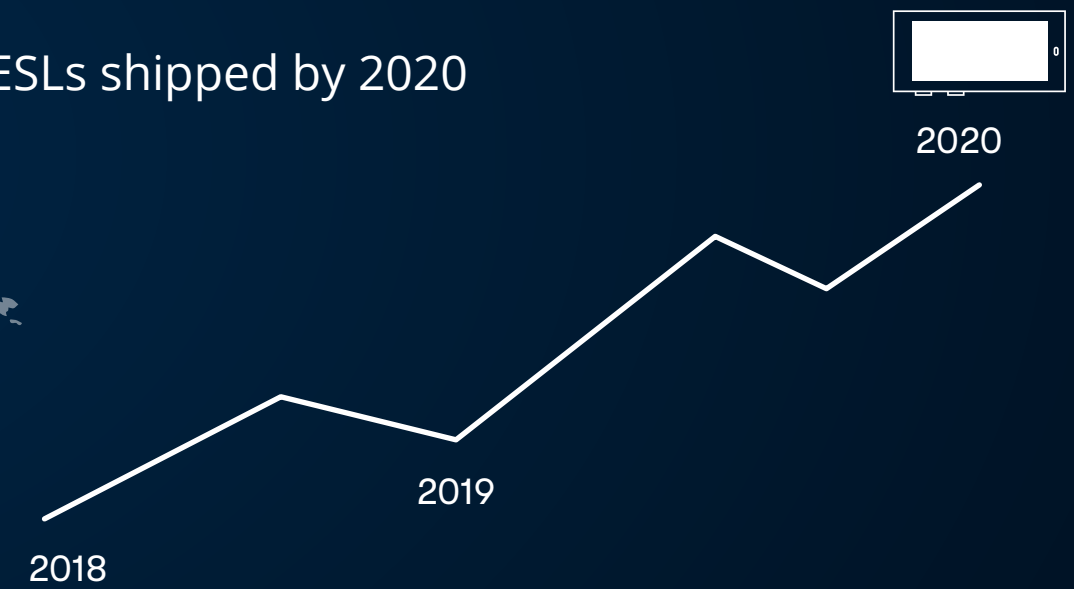
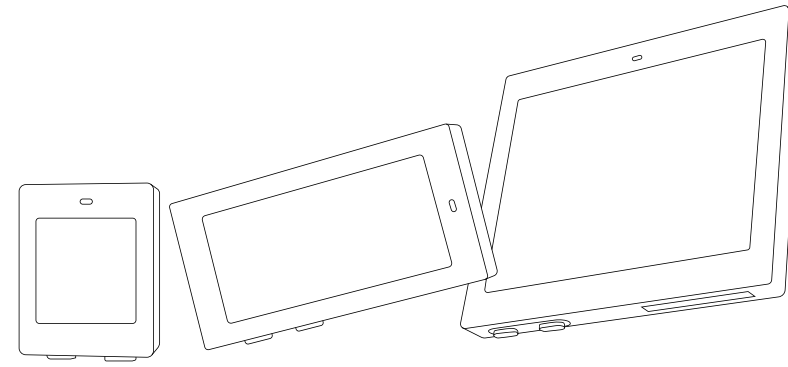


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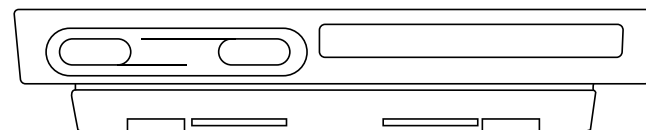
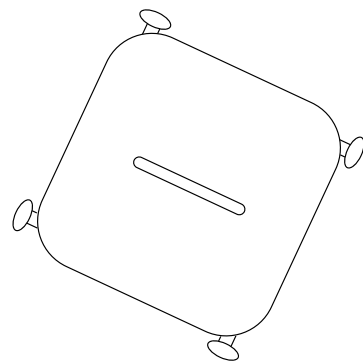
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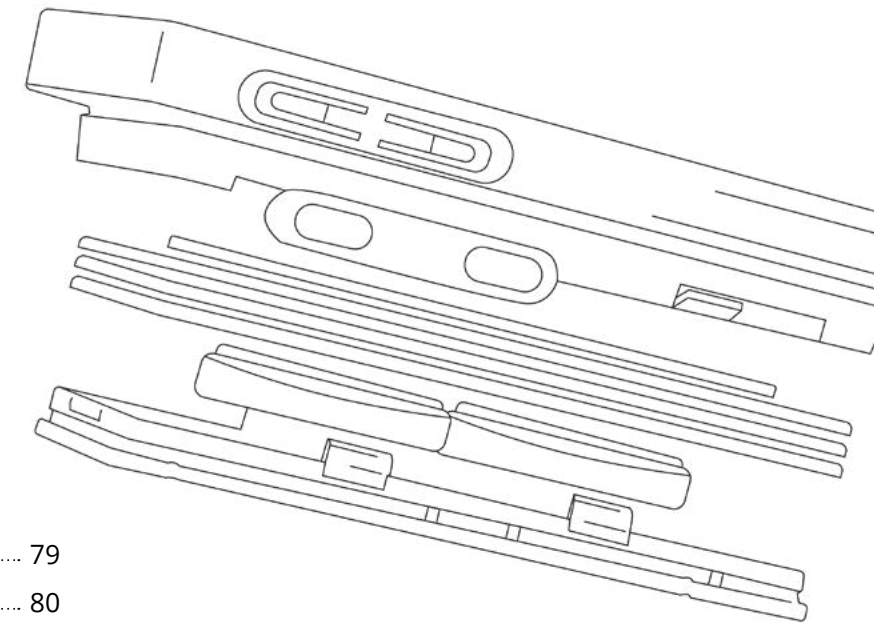


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MESSAGE FROM THE CEO

TEN YEARS AGO, we penetrated the market with a product that was deemed avant-garde and ahead of its time: an electronic shelf label featuring an E-paper display. SOLUM has grown rapidly since then producing labels for global retail giants such as LOBLAWS, REWE, METRO, MACY'S, MIGROS, ALIBABA, DIEBOLD NIXDORF and more.

In fact, we've supplied more than 70 million ESLs in over 35 countries and over 6,000 stores worldwide.

Despite the relative success with our initial rollout, we are far from satisfied. We are fully aware that growth, whether digital or otherwise, is always continuous. To be successful with technological endeavors, a business should aim to never be stagnant.

And where does the initiative to grow and keep growing begin? At the top. I believe that digital transformation rests on the shoulders of C-level leaders. Business managers and owners need to do their due diligence; whether that's researching on their own volition or hearing the advice of more knowledgeable members of their board. CEOs in particular must never fall asleep at the wheel, and be the driving force so the rest of the company may be mobilized to reassess their approach to technology and growth.

This product catalog showcases what our company has to offer for all our clients across the retail and industrial sectors. We don't just think that our daily lives are now more technologically-driven... we know so. Which is why we champion the newer, the faster, the better. We've upgraded the ESL with features that will drive customers to physical retail stores and ultimately improve your businesses' ROI. On that note, may your future business endeavors be triumphant... and digital!

Sungho Jun
CEO



INTRODUCTION

As a spin-off company of Samsung, SOLUM has 45 years of experience with wireless communication technologies and devices. SOLUM's technical excellence, combined with proven product quality enables us to lead the world in ESL technology innovation. SOLUM has launched numerous innovations in the ESL industry and was the first company to offer e-paper based ESLs in 2010. We were also the first company to deploy the Central Server System to help companies reduce infrastructure costs.

Moreover, we are the only ESL supplier with its own manufacturing facilities – allowing us to shorten development time, maintain high standard quality control, optimize the supply chain system, and most of all, maximize cost competitiveness.

SOLUM is founded on a broad technological basis and immense industry know-how. We invest deeply in innovation, design & product development, to achieve the highest standard of quality. This enables SOLUM to develop and sustain long-lasting customer relationships.

For the last ten years, SOLUM has constantly been developing new products and solutions. This year, we are proud to present another innovative ESL solution designed and optimized to enhance further the efficiency, connectivity, and overall profitability of the retail and industrial business operations.

Introducing: Newton.

Multiple sizes. Unlimited possibilities.





Attach Newton on your shelves.

Detach from the limited world of paper labels.



We set the bar for providing high-tech,
well-designed digital solutions.



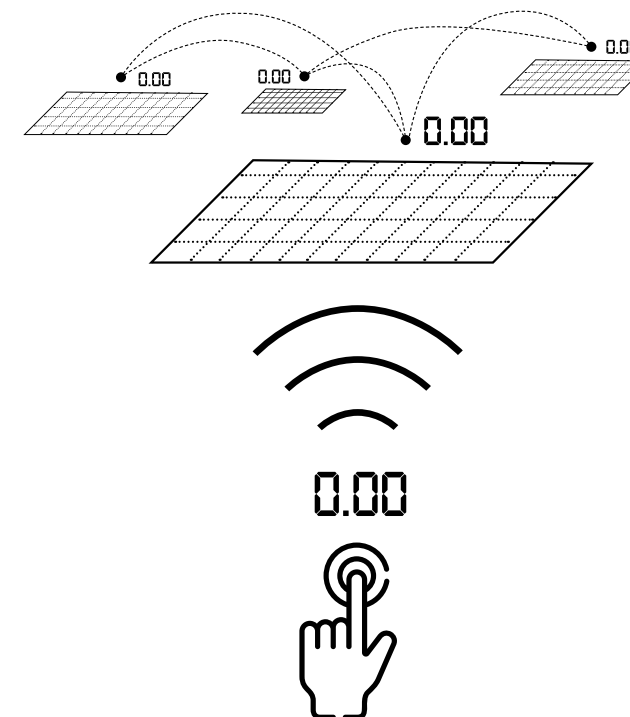
Battery lasts up to 10 years

Up to 10x faster



Multifunctional buttons





HOW DO SOLUM'S ELECTRONIC SHELF LABELS WORK?

It's a wired, wired world, and the long arms of the Internet reach into almost every aspect of our waking life: from the way we communicate, to our data storage, and even to commerce practices.

It's only smart for businesses to leverage society's addiction to the worldwide web to increase their growth at an exponential rate. More and more companies are feeling the pressure to bridge e-commerce processes and physical shopping into one modern, streamlined retail model.

It's a need that is invariably recognized by the retail industry. - the Electronic Shelf Labels (ESLs)



A recent innovation that's taking over the retail universe, one store at a time, is something called ESL, or electronic shelf labels.

Its name basically describes itself: they are systems used in the retail industry for selling products in brick-and-mortar stores. They typically refer to the digital screens that are attached to the outer edge of display shelves that show the pricing and other relevant information of a product.

The business world is slowly recognizing the need for automated price management. According to research analysts, ESL is predicted to grow to be worth \$1,425 million by the year 2023.

How do Electronic Shelf Labels work?

The display modules use electronic paper or liquid crystal paper to display information on a screen.

A local network makes it easy to change the price displayed whenever a product is updated. Since communication between the central servers and the tags are powered by wireless technology, the different components rely on reasonable range, speed, and battery life to be able to function properly.

With just a few clicks from a remote server, thousands of displays across several channels can automatically be changed simultaneously without needing to print out paper labels and deploy store staff to manually replace the price tags on every shelf.

This is one of the strongest features that makes ESLs a great solution for businesses that offer shopping in physical locations. Not only are price and promo strategies easily manipulated with speed and accuracy, you can also do so with consistency—which is especially helpful when a store has several branches in varying locations.

WHY SHOULD MY BUSINESS USE ESLs?

Sure, this emerging technology is exciting and interesting... but what does it do for your business, exactly?



1. Targeted advertising

Among other things, one great feature offered by ESLs is better and more effective advertising campaigns. Connect with smart consumers and send precise, targeted promotions to your patrons based on past purchases, search engine histories, and social media activities.

The technology also allows showrooming consumers to show competitors' prices and user reviews, which can be really effective in convincing customers to patronize your stores.



3. Additional revenue from brand partnerships

Some ESL modules have colorful and fully digital displays, and therefore can feature promos and rewarding in-store offers. This can open up so many possibilities, such as partnerships with brands to endorse their products on your labels.



2. Digital records

ESLs allow businesses to get ahead of their competition and respond to big data at a much faster speed. Taking the responsibility of manually replacing paper labels away from store associates will not only reduce costs but free up your employees' plates, giving them more time to focus on sales and other important tasks.

Simply update any shelf-edge, anywhere, in mere seconds. And you know what's the best thing about having a digital system in place for managing pricing? It's that you will automatically have audit trails that can be viewed, stored, and manipulated on a digital platforms.



4. Easier management of inventory

Other important internal processes may be sped up, too. Since inventory information is now digital, associates will be better able to locate where stock needs to go, improving replenishment and returns. This inventory information can also be connected to your online store, so order fulfillment done through your store's website can be easily managed.



THE FUTURE OF RETAIL

The rise of progressive e-commerce websites has been posing a threat to traditional retailers, which is what moved these brick and mortar stores to explore alternative strategies that will allow them to rise to the challenge of their competitors. Although brick-and-mortar stores will still be the heart and soul of shopping, several steps and components of the typical consumer experience can be improved by digital platforms.

With the help of technology and big data, physical stores can be transformed into dynamic spaces that can provide personalized, exciting, and modern customer experiences.

Reports postulate that the industry's skyrocketing growth is driven by several factors:

1. The ever-growing popularity of retail automation
2. Issues arising with regards to government regulations on commodity pricing
3. Rising labor cost
4. Optimized operational efficiency
5. Real-time product positioning

I. Newton Label

Shelf labels of today are more than just price displays.

For many, the shelf edge is prime real estate: being at consumer eye level, there is so much potential in this area even though it only measures several square inches.

Newton has redefined what it is that shelves can do for store owners, and for warehouse managers, and especially for customers.

Limitless possibilities. That's the Newton promise.

Newton

New electronic shelf label.

KEY FEATURES

10 YEARS BATTERY LIFE

For the last 20 years, the general expected lifetime of the ESL has been 5 years. But with Newton, changing batteries every five years is now a thing of the past. We have managed to increase Newton's battery life to an unparalleled ten years.

The expected battery life of Newton is 10 years in 10°~40°, 5 years in 0°~10° and 3 years in -0°~-25°.



Advantages:

- a) Lower lifetime cost
- b) Lower labor cost



X10 FAST UPDATE SPEED

Three thousand tags can be updated within 5 minutes with a single Newton Gateway, which means it takes 0.1 seconds to update one tag. That makes Newton 10 times faster compared to other ESLs.

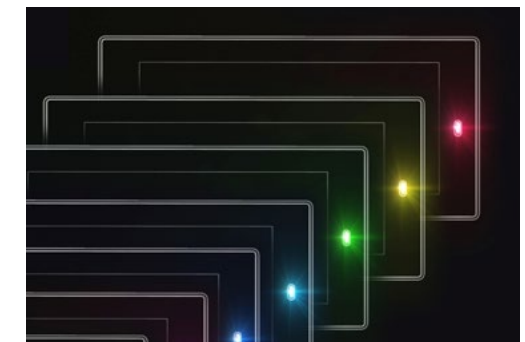
Advantages:

- a) Assignment process time between a label and product is 6~10 seconds
- b) Labor efficiency, increased store productivity

7 COLORS LED

The innovation of Newton in the battery life allows more possibility of heavy usage of LEDs. In other LED tags, the LEDs can only be lit on when it's requested to because of the high battery consumption.

Only 240 times of one LED light per a day (about 10 times of 10-seconds-set of LED blink-ing) is allowed to maintain the 5 years of battery life. But now this new generation tag allows the continuous LED blinking for a promotional purpose. With 3 sec of interval and 8 hours of operation in a day (8,228 times of LED light per a day) and for 100 days for a year, the battery life can still go up to 5 years.



2 PROGRAMMABLE BUTTONS

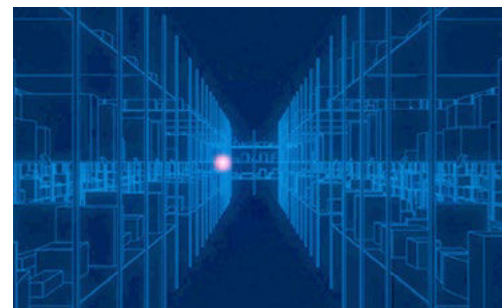
Newton comes with two programmable buttons which allows for more efficient tasks execution in retail and industrial environments. These two buttons can be associated with simple or complex actions - from initiating help from customer service to completing an order picking process.

With these buttons, customers can interact with the store more seamlessly, and staff can make their daily tasks easier and more efficient, leading to enhanced productivity.



LOCATION BASED SERVICE (LBS)

Thanks to radio-frequency identification (RFID) technology, Newton is able to support Location Based Service. This feature allows automated product location and product navigation by detecting signal strength between the Gateways and ESLs.



PROTECTION WINDOW

Labels can break for many reasons: they can be dropped, stepped on, or hit by shopping carts. The new screen protection cover increases the durability of the label screen up to 80% (323 kg m/s²) making it safer from potential hazards.



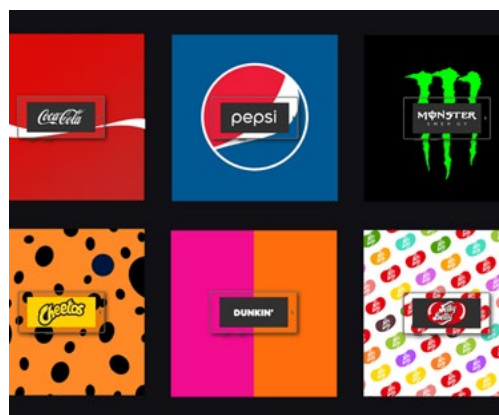
REFINED AESTHETIC DESIGN

When it comes to design, we've completely redefined the capabilities of an ESL. SOLUM Newton comes with a whole new look—sleek and straightforward—giving a premium and modern look to wherever you choose to put it.



CUSTOMIZABLE DESIGN

The real beauty of Newton is the fact that it is customizable. With Newton, you can incorporate your company's colors, patterns, and company logo. Now, that's what we call branding.



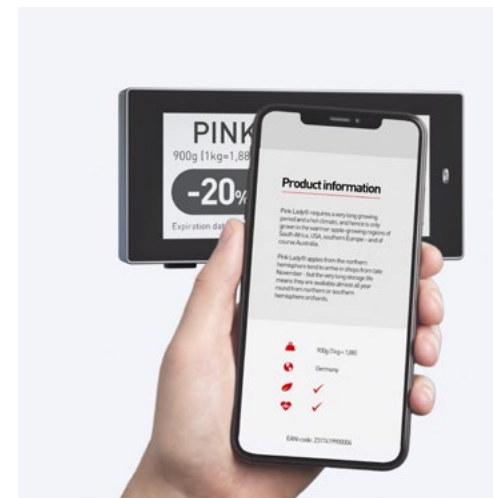
UP TO 7 PAGE

All products are not created equal: there are some that are accompanied with more information than others. From nutritional facts to expiration dates to allergy warnings, all of this information can be uploaded into Newton's 7 pages. Using the multifunctional buttons, customers can flip through the different pages to access more data about the product.



NFC

Newton's built-in NFC capabilities allow you to perform mobile payments (self-checkout), link to your company's online website, and download a digital coupon.



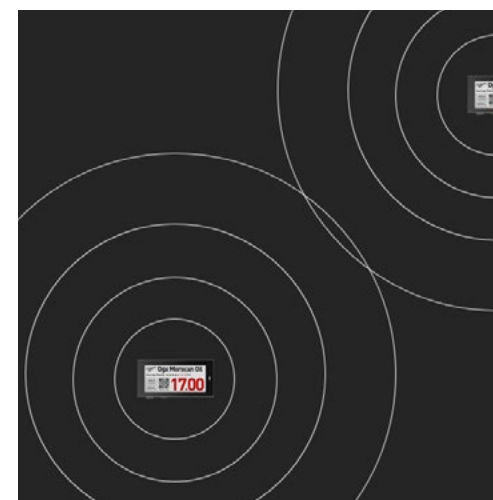
MORE THAN 60 RF CHANNELS

Newton allows more than 60 RF channels (meanwhile, competitors offer only 11~16 available channels) which means it's a lot easier to select the communication channels in case of a very crowded WIFI circumstance.



AUTO CHANNEL SELECTION

Even though we've found a means to prevent unexpected WIFI collisions thanks to our more than 60 RFI channels, the Auto Channel Section function of Newton gives you the opportunity to move to a free channel to avoid any RF interference. This means your store associates need not worry about any wireless communication issues, as the ESL system is always interference-free.



IP67

Newton is fully water- and dustproof. You can put it anywhere, wet or dry. It can withstand the different temperatures in the fish, meat, or garden sections and last up to 30 minutes in water. Even the tiniest dust particles won't be able to penetrate it.



SECONDARY FEATURES



COMPLETE SEALING SYSTEM

The screen is also completely sealed to prevent the display colors from fading or drying out, meaning your display can retain that crisp color for longer.



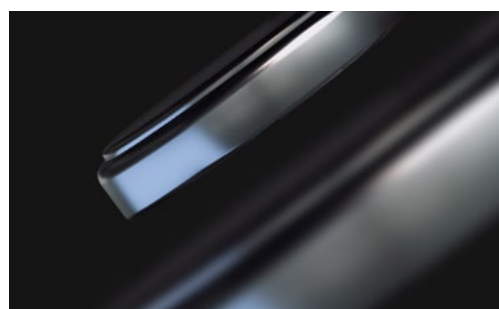
HIGH RESOLUTION

Newton's screen resolution got upgraded by 20%: now, the crisp and clear display comes with 184dpi for our 1.6" display, and 145dpi for our 2.9".



EASY LOCKING SYSTEM

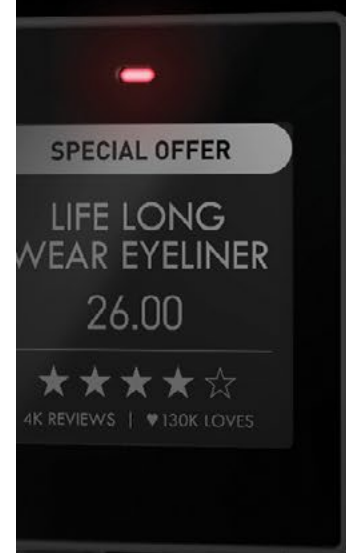
Installation and removal have never been easier with Newton's easy locking system. You won't need any other tools for installation. Just use the Newton remover to detach a tag from the shelves.

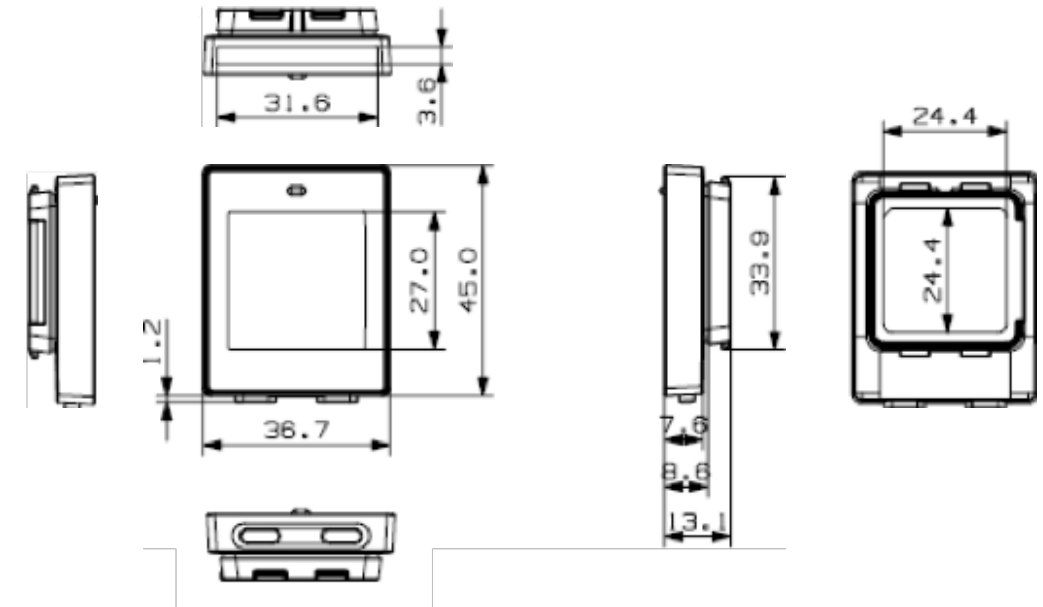


EASY BATTERY REPLACEMENT

Each Newton unit comes with its own battery, which can be replaced manually. Instead of sending a whole tag to the RMA (Returns Management Authorization) center, SOLUM can simply deliver a replacement battery pack. This reduces the processing time and cost. The LED tags on each ESL unit are also programmed to blink constantly as an indication that a tag is running low on battery.

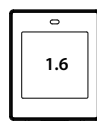
TECHNICAL SPECIFICATIONS



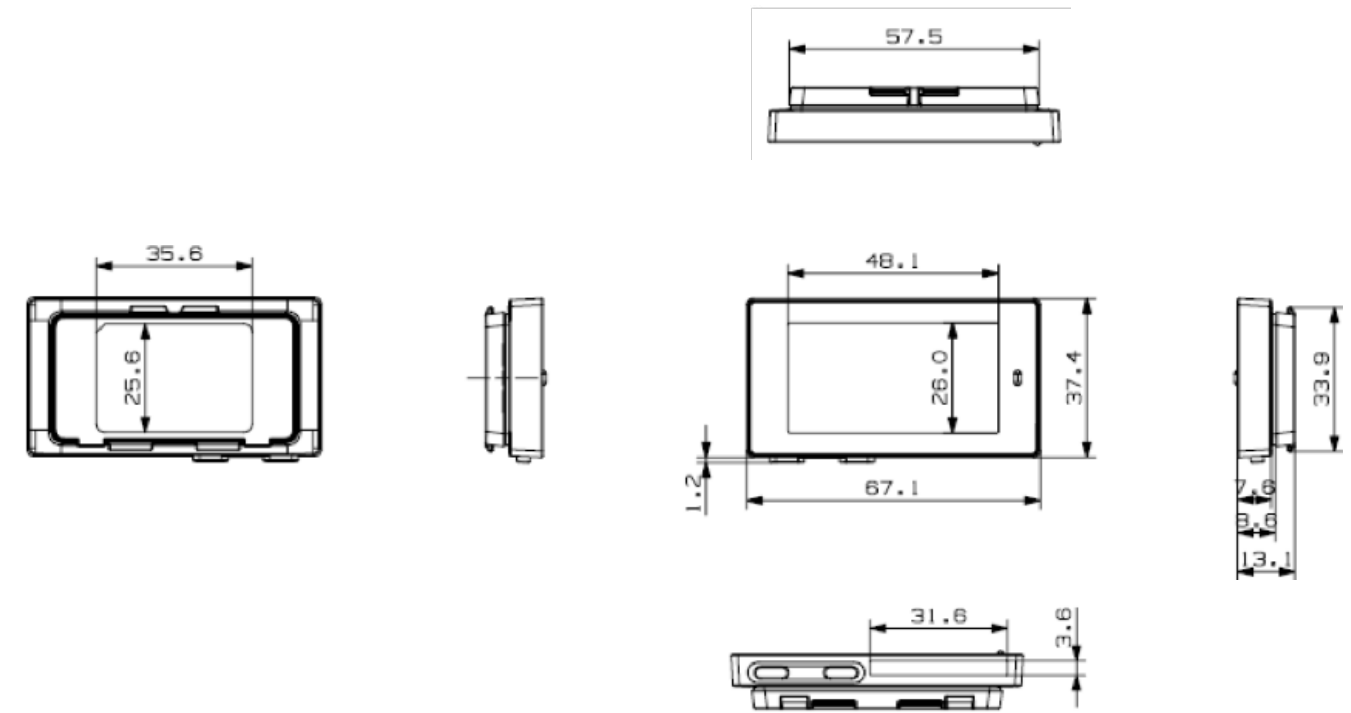


TECHNICAL SPECIFICATIONS

Model W:EL016H3WRA/WWW B:EL016H3BRA/WWW	Pixels color BW / BWR / BWY	Compliance CE, RoHS, FCC
Dimension (mm) 36.7 × 45.0 × 13.1	Viewing angle Nearly 180°	NFC FeliCa NFC Forum Type 3
Active display area (mm) 27.0 × 27.0	Usable pages Up to 7 pages	Waterproof IP67
Resolution (pixel) 200 x 200	Operating temperature 0 - 40°C	Button 2 Buttons
Pixel density 184 dpi	Battery CR2450 × 1ea	LED 7 Colors (Red/Green/Blue/Yellow/Cyan/Magenta/White)
Display technology Full Graphic E-ink Display	Battery lifetime Up To 5 years (2 Update/day) + 3 years in 0°~10°	ESL operating frequency 2.4 Ghz
Bezel color White or Black, Customizable Color(Optional)	Encryption 128-Bit AES	Wireless firmware update Yes

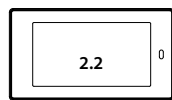


1.6 inch

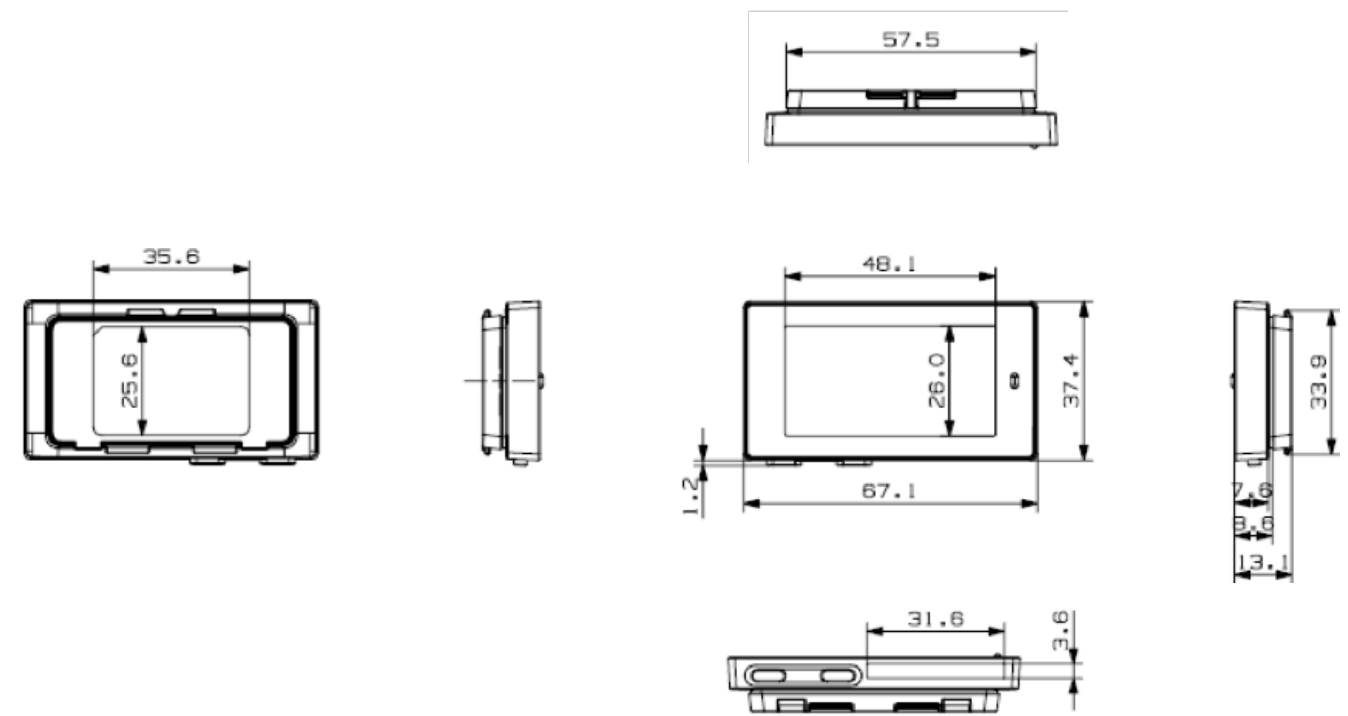


TECHNICAL SPECIFICATIONS

Model W:EL022H3WRA/WWW B:EL022H3BRA/WWW	Pixels color BW / BWR / BWY	Compliance CE, RoHS, FCC
Dimension (mm) 67.1 × 37.4 × 13.1	Viewing angle Nearly 180°	NFC FeliCa NFC Forum Type 3
Active display area (mm) 48.1 × 26.0	Usable pages Up to 7 pages	Waterproof IP67
Resolution (pixel) 296 × 160	Operating temperature 0 - 40°C	Button 2 Buttons
Pixel density 156 dpi	Battery CR2450 × 2ea	LED 7 Colors (Red/Green/Blue/Yellow/Cyan/Magenta/White)
Display technology Full Graphic E-ink Display	Battery lifetime Up To 10 years (2 Update/day) + 5 years in 0°~10°	ESL operating frequency 2.4 Ghz
Bezel color White or Black, Customizable Color(Optional)	Encryption 128-Bit AES	Wireless firmware update Yes

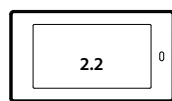


2.2 inch

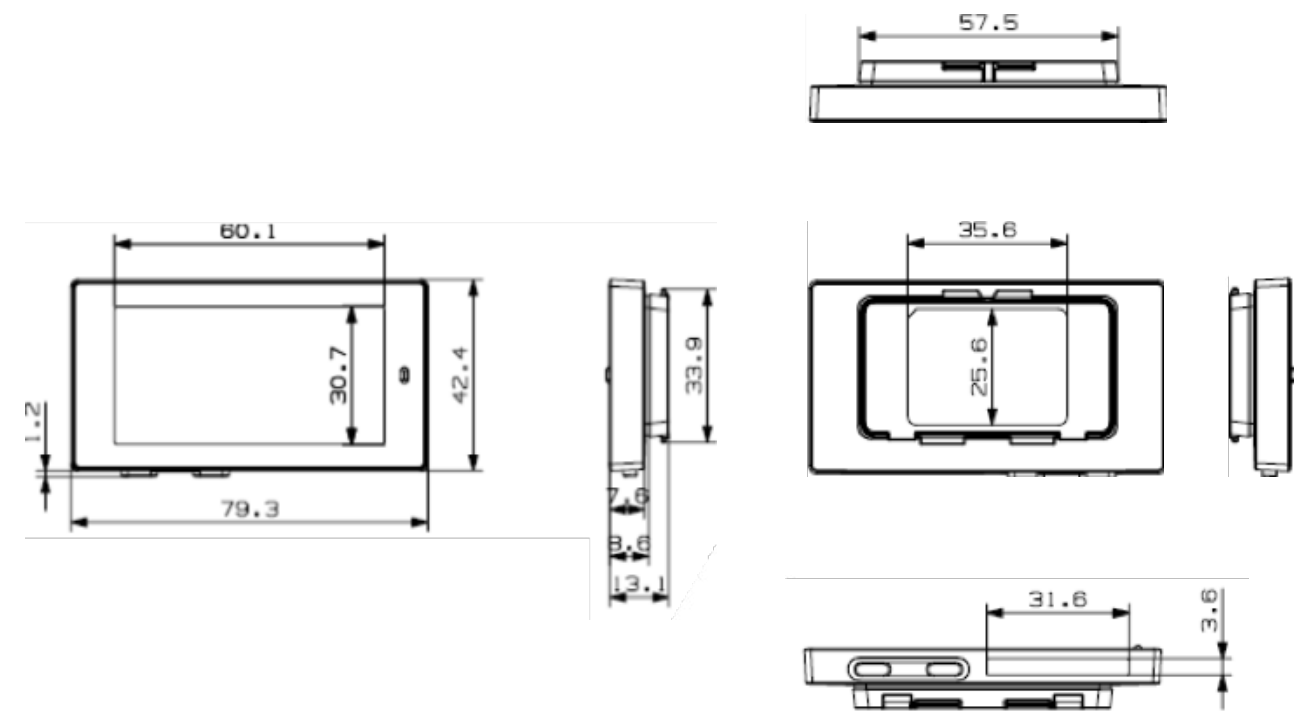


TECHNICAL SPECIFICATIONS

Model W:ELF22H3WMA/WWW B:ELF22H3BMA/WWW	Pixels color BW	Compliance CE, RoHS, FCC
Dimension (mm) 67.1 × 37.4 × 13.1	Viewing angle Nearly 180°	NFC FeliCa NFC Forum Type 3
Active display area (mm) 48.1 × 26.0	Usable pages Up to 7 pages	Waterproof IP67
Resolution (pixel) 296 × 160	Operating temperature -25 ~ 0°C	Button 2 Buttons
Pixel density 156 dpi	Battery CR2450 × 2ea	LED 7 Colors (Red/Green/Blue/Yellow/Cyan/Magenta/White)
Display technology Full Graphic E-ink Display	Battery lifetime Up To 3 years (1 Update/day)	ESL operating frequency 2.4 Ghz
Bezel color White or Black, Customizable Color(Optional)	Encryption 128-Bit AES	Wireless firmware update Yes

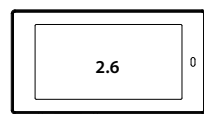


**2.2 inch
freezer**

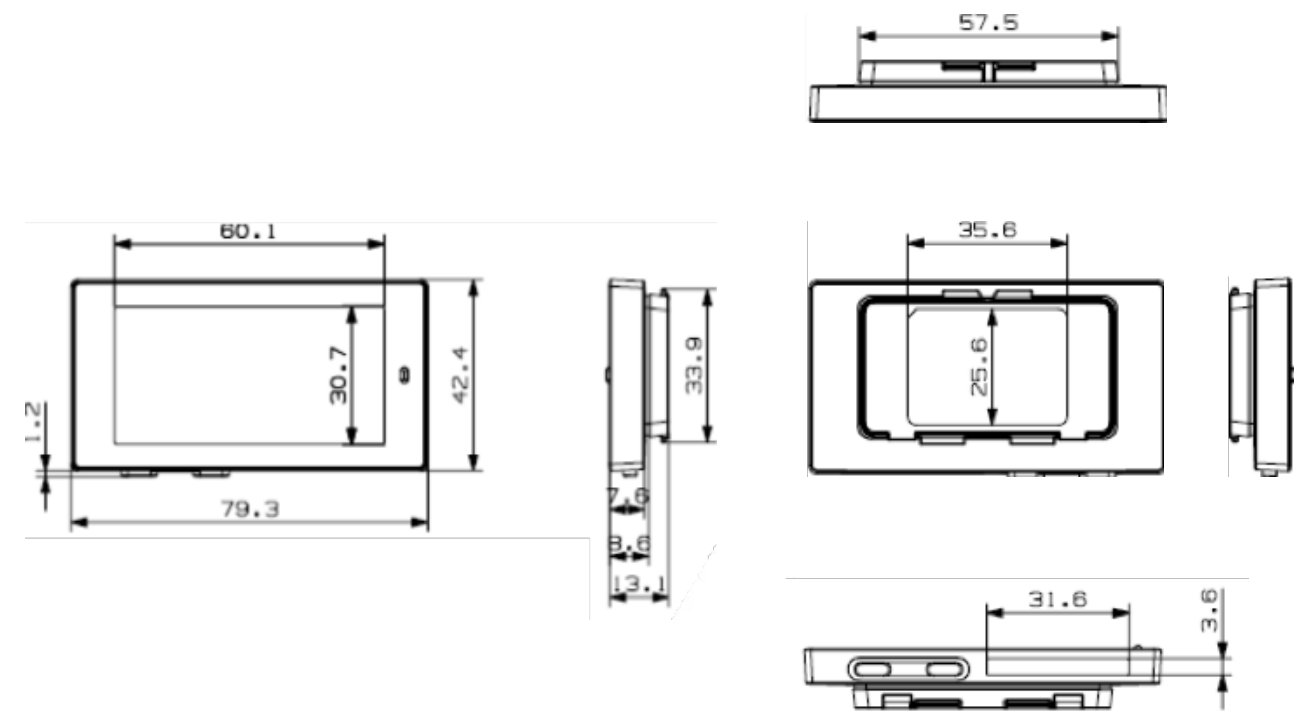


TECHNICAL SPECIFICATIONS

Model W:EL026H3WRA/WWW B:EL026H3BRA/WWW	Pixels color BW / BWR / BWY	Compliance CE, RoHS, FCC
Dimension (mm) 79.3 × 42.4 × 13.1	Viewing angle Nearly 180°	NFC FeliCa NFC Forum Type 3
Active display area (mm) 60.1 × 30.7	Usable pages Up to 7 pages	Waterproof IP67
Resolution (pixel) 360 × 184	Operating temperature 0 - 40°C	Button 2 Buttons
Pixel density 152 dpi	Battery CR2450 × 2ea	LED 7 Colors (Red/Green/Blue/Yellow/Cyan/Magenta/White)
Display technology Full Graphic E-ink Display	Battery lifetime Up To 10 years (2 Update/day) + 5 years in 0°~10°	ESL operating frequency 2.4 Ghz
Bezel color White or Black, Customizable Color(Optional)	Encryption 128-Bit AES	Wireless firmware update Yes

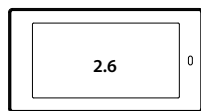


2.6 inch

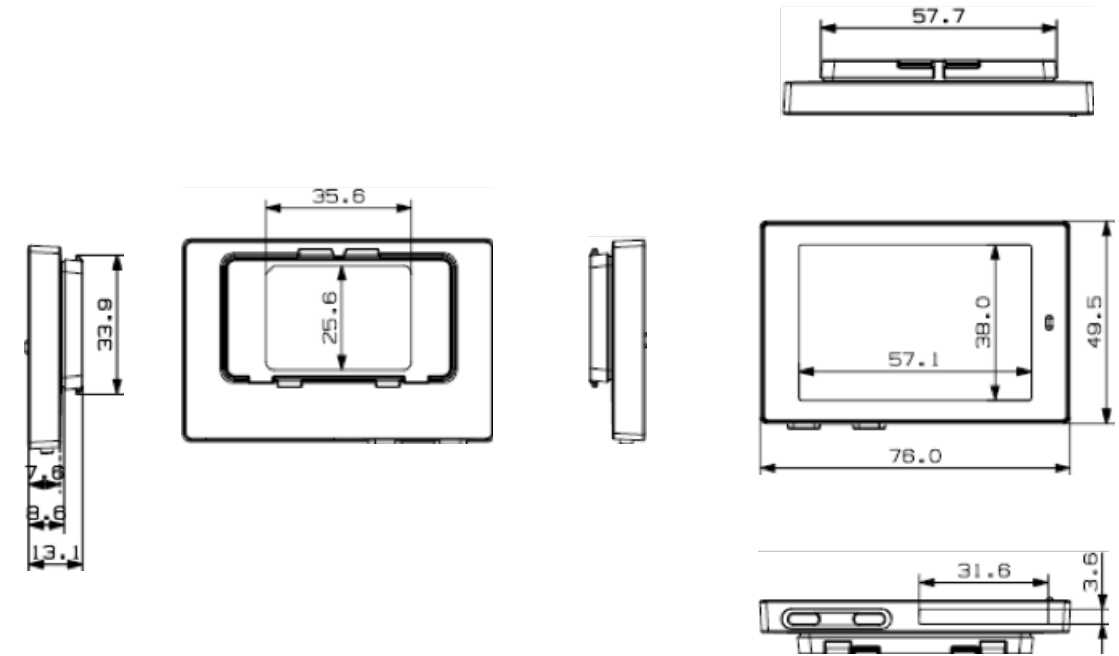
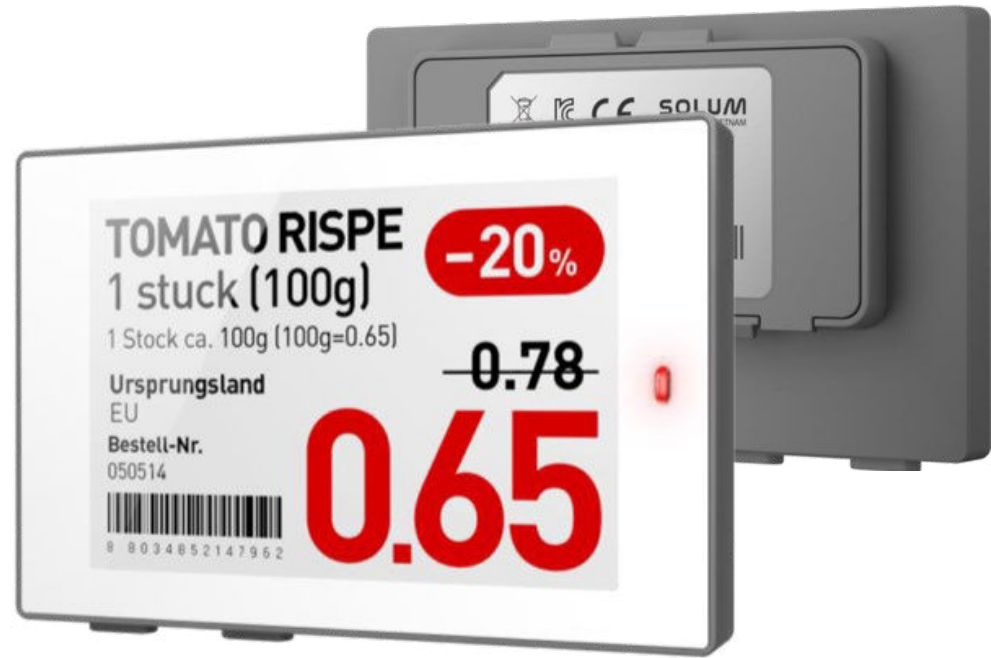


TECHNICAL SPECIFICATIONS

Model W:ELF26H3WMA/WWW B:ELF26H3BMA/WWW	Pixels color BW	Compliance CE, RoHS, FCC
Dimension (mm) 79.3 × 42.4 × 13.1	Viewing angle Nearly 180°	NFC FeliCa NFC Forum Type 3
Active display area (mm) 60.1 × 30.7	Usable pages Up to 7 pages	Waterproof IP67
Resolution (pixel) 360 × 184	Operating temperature -25 ~ 0°C	Button 2 Buttons
Pixel density 152 dpi	Battery CR2450 × 2ea	LED 7 Colors (Red/Green/Blue/Yellow/Cyan/Magenta/White)
Display technology Full Graphic E-ink Display	Battery lifetime Up To 3 years (1 Update/day)	ESL operating frequency 2.4 Ghz
Bezel color White or Black, Customizable Color(Optional)	Encryption 128-Bit AES	Wireless firmware update Yes

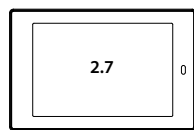


**2.6 inch
freezer**

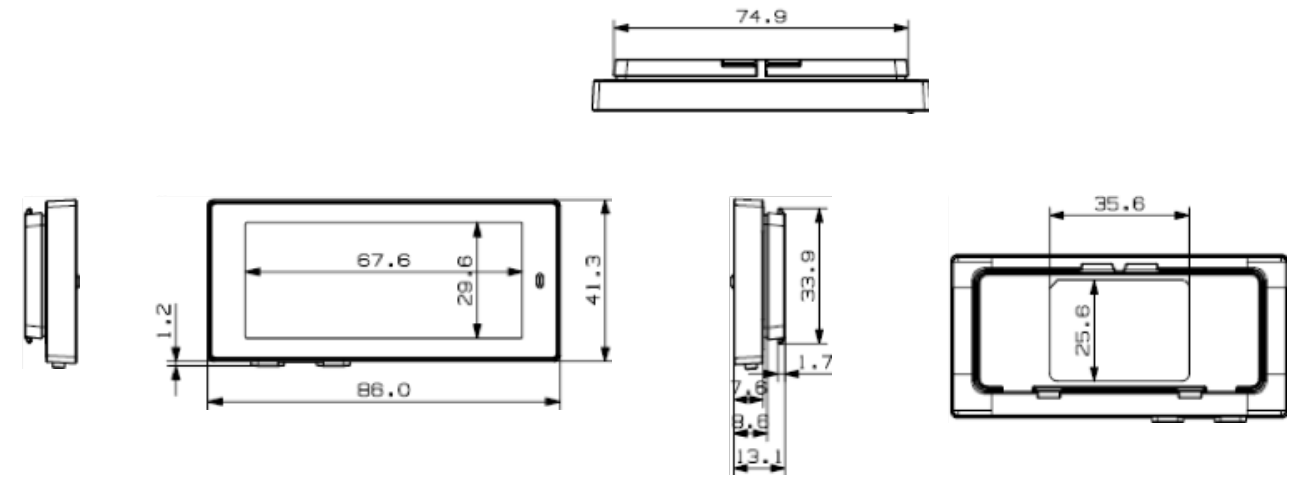


TECHNICAL SPECIFICATIONS

Model W:EL027H3WRA/WWW B:EL027H3BRA/WWW	Pixels color BW / BWR / BWY	Compliance CE, RoHS, FCC
Dimension (mm) 76.0 × 49.5 × 13.1	Viewing angle Nearly 180°	NFC FeliCa NFC Forum Type 3
Active display area (mm) 57.3 × 38.1	Usable pages Up to 7 pages	Waterproof IP67
Resolution (pixel) 300 × 200	Operating temperature 0 - 40°C	Button 2 Buttons
Pixel density 133 dpi	Battery CR2450 × 2ea	LED 7 Colors (Red/Green/Blue/Yellow/Cyan/Magenta/White)
Display technology Full Graphic E-ink Display	Battery lifetime Up To 10 years (2 Update/day) + 5 years in 0°~10°	ESL operating frequency 2.4 Ghz
Bezel color White or Black, Customizable Color(Optional)	Encryption 128-Bit AES	Wireless firmware update Yes

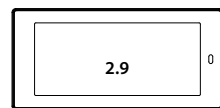


2.7 inch

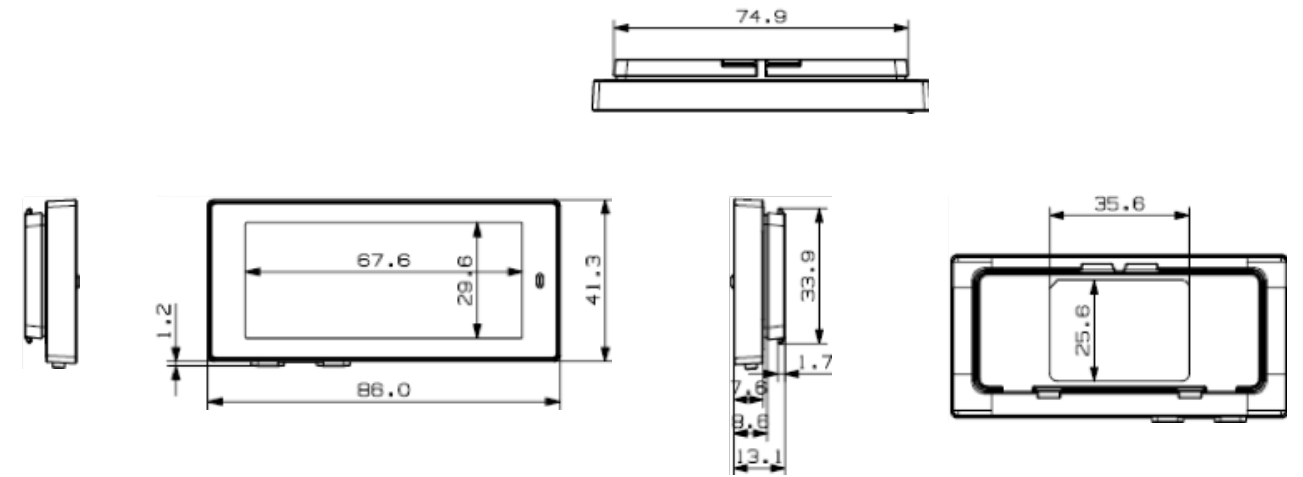


TECHNICAL SPECIFICATIONS

Model W:EL029H3WRA/WWW B:EL029H3BRA/WWW	Pixels color BW / BWR / BWY	Compliance CE, RoHS, FCC
Dimension (mm) 86.0 × 41.3 × 13.1	Viewing angle Nearly 180°	NFC FeliCa NFC Forum Type 3
Active display area (mm) 67.6 × 29.6	Usable pages Up to 7 pages	Waterproof IP67
Resolution (pixel) 384 × 168	Operating temperature 0 - 40°C	Button 2 Buttons
Pixel density 144 dpi	Battery CR2450 × 2ea	LED 7 Colors (Red/Green/Blue/Yellow/Cyan/Magenta/White)
Display technology Full Graphic E-ink Display	Battery lifetime Up To 10 years (2 Update/day) + 5 years in 0°~10°	ESL operating frequency 2.4 Ghz
Bezel color White or Black, Customizable Color(Optional)	Encryption 128-Bit AES	Wireless firmware update Yes

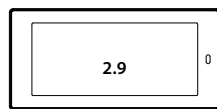


2.9 inch

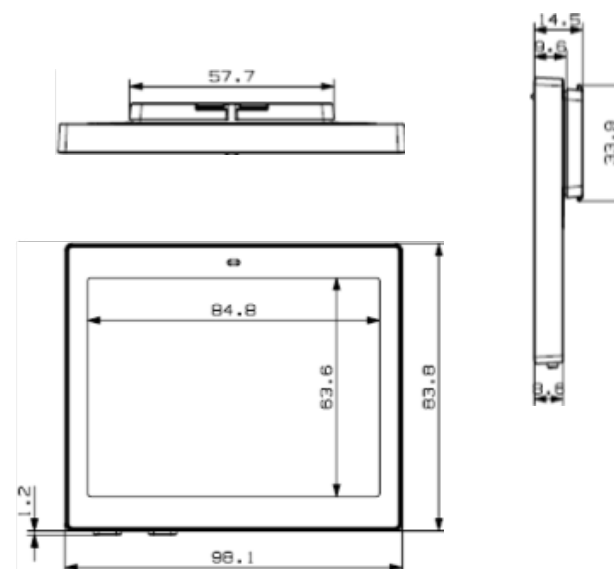
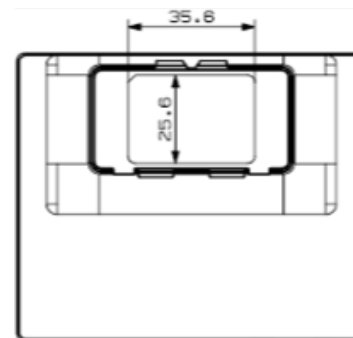


TECHNICAL SPECIFICATIONS

Model W:ELF29H3WMA/WWW B:ELF29H3BMA/WWW	Pixels color BW	Compliance CE, RoHS, FCC
Dimension (mm) 86.0 × 41.3 × 13.1	Viewing angle Nearly 180°	NFC FeliCa NFC Forum Type 3
Active display area (mm) 67.6 × 29.6	Usable pages Up to 7 pages	Waterproof IP67
Resolution (pixel) 384 × 168	Operating temperature -25 ~ 0°C	Button 2 Buttons
Pixel density 144 dpi	Battery CR2450 × 2ea	LED 7 Colors (Red/Green/Blue/Yellow/Cyan/Magenta/White)
Display technology Full Graphic E-ink Display	Battery lifetime Up To 3 years (1 Update/day)	ESL operating frequency 2.4 Ghz
Bezel color White or Black, Customizable Color(Optional)	Encryption 128-Bit AES	Wireless firmware update Yes

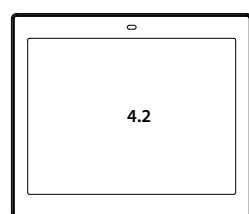


**2.9 inch
freezer**

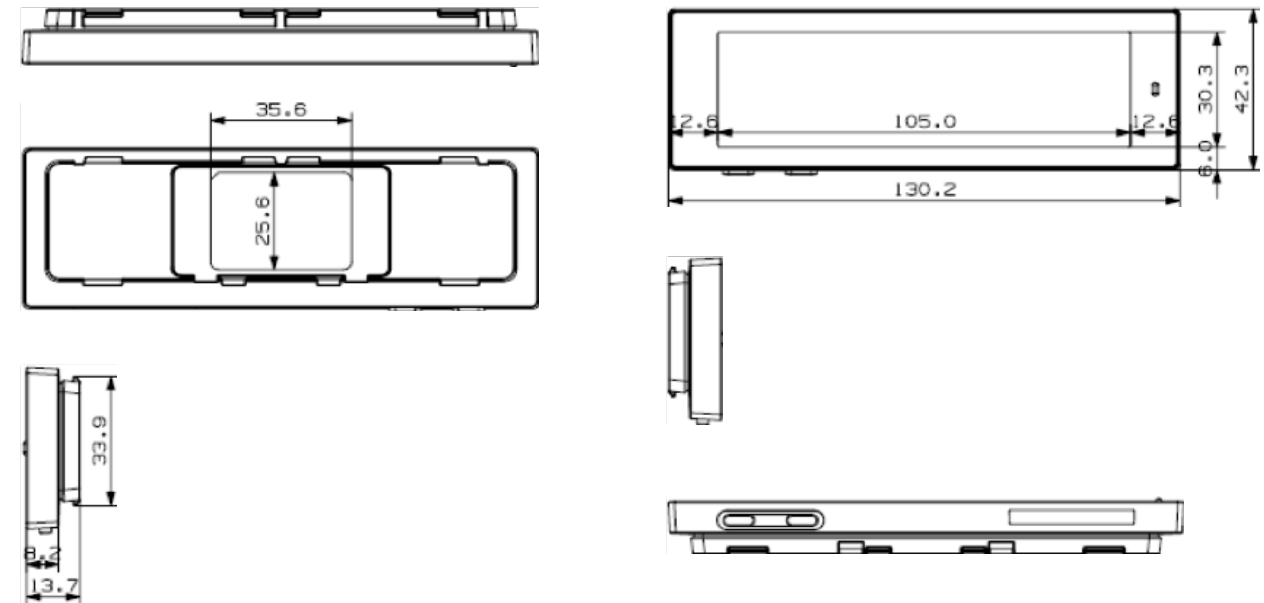


TECHNICAL SPECIFICATIONS

Model W:EL042H3WRA/WWW B:EL042H3BRA/WWW	Pixels color BW / BWR / BWY	Compliance CE, RoHS, FCC
Dimension (mm) 98.1 × 83.8 × 14.5	Viewing angle Nearly 180°	NFC FeliCa NFC Forum Type 3
Active display area (mm) 84.8 × 63.6	Usable pages Up to 7 pages	Waterproof IP67
Resolution (pixel) 400 × 300	Operating temperature 0 - 40°C	Button 2 Buttons
Pixel density 120 dpi	Battery CR2450 × 2ea	LED 7 Colors (Red/Green/Blue/Yellow/Cyan/Magenta/White)
Display technology Full Graphic E-ink Display	Battery lifetime Up To 10 years (2 Update/day) + 5 years in 0°~10°	ESL operating frequency 2.4 Ghz
Bezel color White or Black, Customizable Color(Optional)	Encryption 128-Bit AES	Wireless firmware update Yes

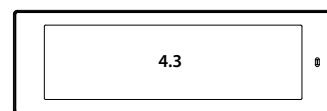


4.2 inch

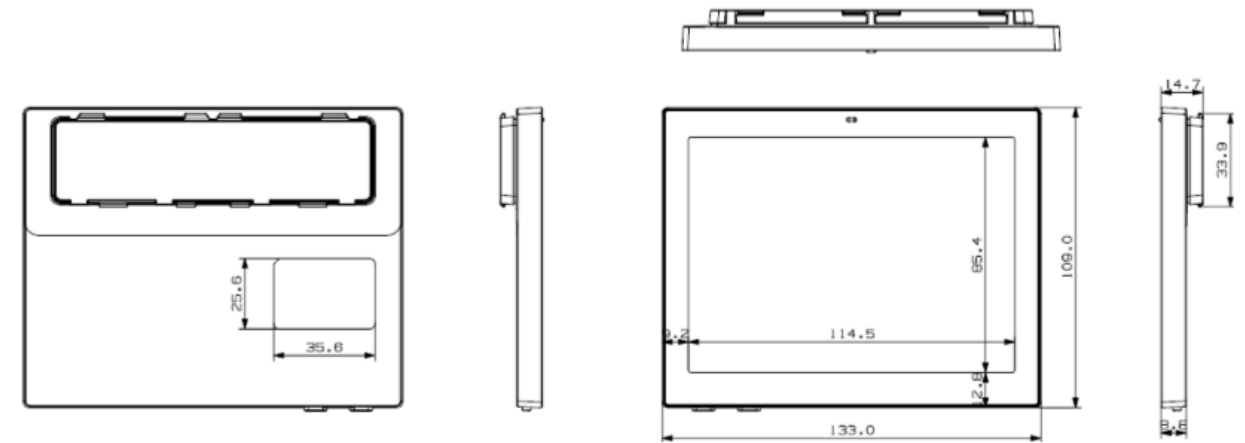


TECHNICAL SPECIFICATIONS

Model W:EL043H3WRA/WWW B:EL043H3BRA/WWW	Pixels color BW / BWR / BWY	Compliance CE, RoHS, FCC
Dimension (mm) 130.3 × 42.4 × 13.9	Viewing angle Nearly 180°	NFC FeliCa NFC Forum Type 3
Active display area (mm) 105.4 × 30.7	Usable pages Up to 7 pages	Waterproof IP67
Resolution (pixel) 522 × 152	Operating temperature 0 - 40°C	Button 2 Buttons
Pixel density 125 dpi	Battery CR2450 × 2ea	LED 7 Colors (Red/Green/Blue/Yellow/Cyan/Magenta/White)
Display technology Full Graphic E-ink Display	Battery lifetime Up To 10 years (2 Update/day) + 5 years in 0°~10°	ESL operating frequency 2.4 Ghz
Bezel color White or Black, Customizable Color(Optional)	Encryption 128-Bit AES	Wireless firmware update Yes

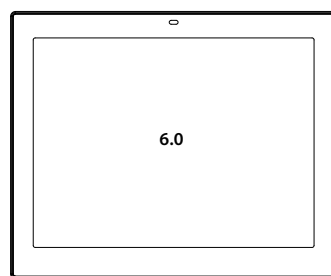


4.3 inch

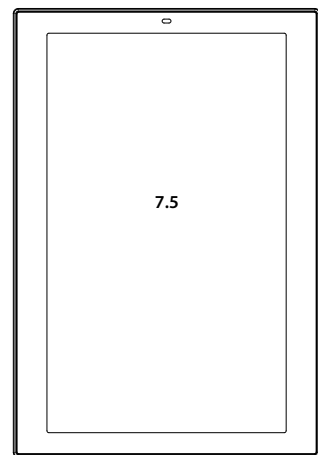
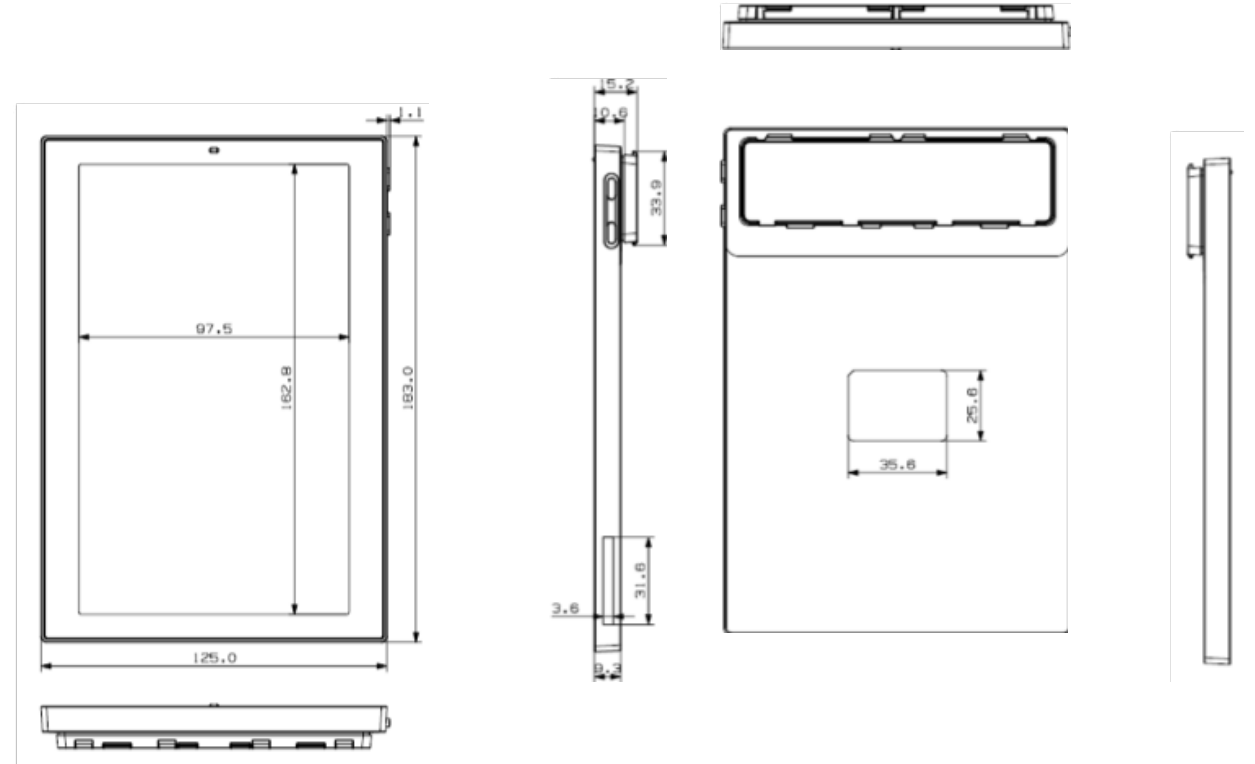


TECHNICAL SPECIFICATIONS

Model W:EL060H3WRA/WWW B:EL060H3BRA/WWW	Pixels color BW / BWR / BWY	Compliance CE, RoHS, FCC
Dimension (mm) 133.0 × 109.0 × 14.7	Viewing angle Nearly 180°	NFC FeliCa NFC Forum Type 3
Active display area (mm) 114.9 × 85.8	Usable pages Up to 3 pages	Waterproof IP67
Resolution (pixel) 600 × 448	Operating temperature 0 - 40°C	Button 2 Buttons
Pixel density 132 dpi	Battery CR2450 × 4ea	LED 7 Colors (Red/Green/Blue/Yellow/Cyan/Magenta/White)
Display technology Full Graphic E-ink Display	Battery lifetime Up To 10 years (1 Update/day) + 5 years in 0°~10°	ESL operating frequency 2.4 Ghz
Bezel color White or Black, Customizable Color(Optional)	Encryption 128-Bit AES	Wireless firmware update Yes



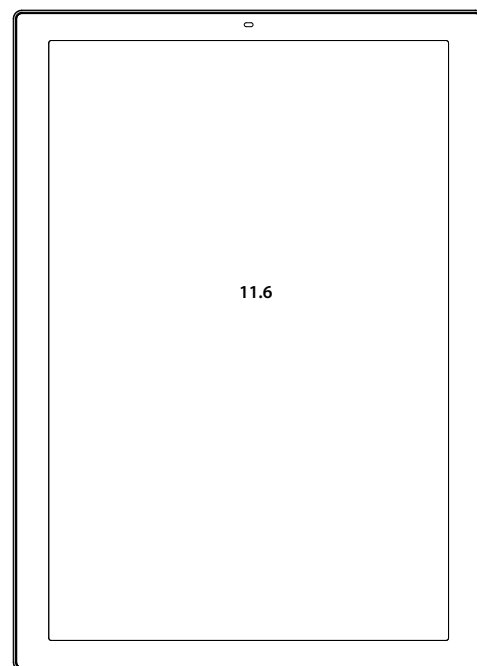
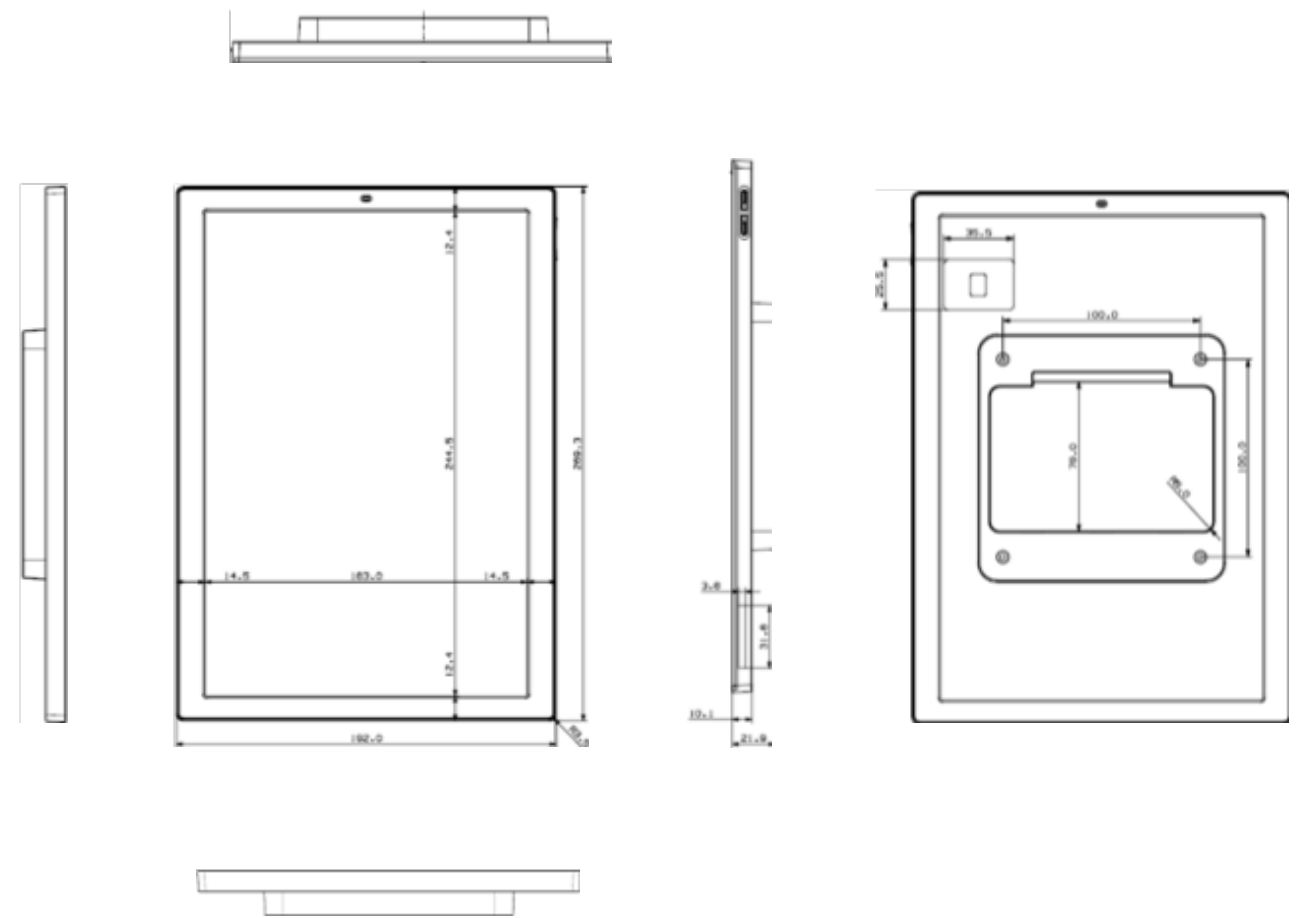
6.0 inch



7.5 inch

TECHNICAL SPECIFICATIONS

Model W:EL075H3WRA/WWW B:EL075H3BRA/WWW	Pixels color BW / BWR	Compliance CE, RoHS, FCC
Dimension (mm) 125.0 × 183.0 × 15.2	Viewing angle Nearly 180°	NFC FeliCa NFC Forum Type 3
Active display area (mm) 163.2 × 97.9	Usable pages Up to 3 pages	Waterproof IP67
Resolution (pixel) 800x480	Operating temperature 0 - 40°C	Button 2 Buttons
Pixel density 126 dpi	Battery CR2450 × 4ea	LED 7 Colors (Red/Green/Blue/Yellow/Cyan/Magenta/White)
Display technology Full Graphic E-ink Display	Battery lifetime Up To 10 years (1 Update/day) + 5 years in 0°~10°	ESL operating frequency 2.4 Ghz
Bezel color White or Black, Customizable Color(Optional)	Encryption 128-Bit AES	Wireless firmware update Yes



11.6 inch

TECHNICAL SPECIFICATIONS

Model W:EL116H3WRA/WWW B:EL116H3BRA/WWW	Pixels color BW / BWR	Compliance CE, RoHS, FCC
Dimension (mm) 192.0 × 268.0 × 21.9	Viewing angle Nearly 180°	NFC FeliCa NFC Forum Type 3
Active display area (mm) 163.0 × 244.5	Usable pages Up to 3 pages	Waterproof IP67
Resolution (pixel) 640 × 960	Operating temperature 0 - 40°C	Button 2 Buttons
Pixel density 100 dpi	Battery AA × 4ea	LED 7 Colors (Red/Green/Blue/Yellow/Cyan/Magenta/White)
Display technology Full Graphic E-ink Display	Battery lifetime Up To 10 years (1 Update/day) + 5 years in 0°~10°	ESL operating frequency 2.4 Ghz
Bezel color White or Black, Customizable Color(Optional)	Encryption 128-Bit AES	Wireless firmware update Yes

II. Gateways

Images from the system are sent to the electronic shelf label units through the Gateways. It is only appropriate that speed and capacity are vital.

SOLUM has come up with a renewed Gateways for our newest Newton line-up. Newton's implementation is now easier to use, more cost-efficient and has a wider radius.

Newton GATEWAY



Newton Gateway digital numbering system gives it a modern and digitized look. But more importantly, this makes it easier for managers to identify the Gateway's ID for internal device management purposes.

Another improvement with Newton Gateway is that it has a tag and load-balancing system which means that the number of connected labels will always be evenly distributed. No overloading or underloading between Gateways and no need to manually track the Gateways' load.

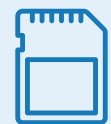
It has more than 60 RF channels which means that there's almost no interference issue. And its auto-channel selection system allows it to avoid channel collisions.



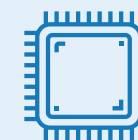
50,000 labels
CAPACITY



**Ranges up to
30 meters or 98 feet**
COMMUNICATION RADIUS



4GB
FLASH MEMORY



1GB
RAM



10W
POWER CONSUMPTION



Ethernet
INTERFACE

Newton USB GATEWAY

The USB Gateway is a stand-alone system. However, it can also be an extension to the Newton Gateway. It can offer additional capacity, memory, range, among others, without the added infrastructure.

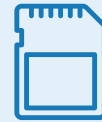
With Newton's Gateways, you can achieve a more seamless and automated data exchange between your electronic shelf labels and your command system.



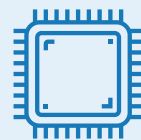
50,000 labels
CAPACITY



**Ranges up to
25 meters or 82 feet**
COMMUNICATION RADIUS



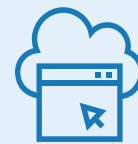
4GB
FLASH MEMORY



512 MB
RAM



5W
POWER CONSUMPTION



USB
INTERFACE

IV. AIMS Software

SOLUM's very own Advanced Information Management System (AIMS) is a platform that can be deployed locally, through a central server, and via Cloud. With AIMS, our clients can get the most of their Newton label, resulting in increased business productivity and maximized return on their investment.

AIMS

AIMS
Site server

AIMS
Central server

AIMS
SaaS

The central command center of our Newton label, AIMS is an adaptable, scalable, and highly-intuitive ESL management software system specially designed to help you get the most out of our electronic shelf labeling solutions.

Our AIMS software server can be deployed in three environments - On-Site, Central Server/Cloud, and as a Service as a Software (SaaS). All these four options can be connected to all existing data sources which are relevant to your intended use of our ESL solutions, all while providing easy-to-use controls for commands such as price updates, stock replenishment, or locating distinct items in the warehouse.

For our retail clients such as hypermarkets, groceries, and fashion stores, AIMS software can

use data such as customer purchase history, stock levels, and product location to initiate timely promotional offers and discounts. In an industrial environment, AIMS software can activate applications such as pick to light, wireless Kanban, and smart ordering system to achieve a more seamless, cost-efficient, and sustainable warehouse and manufacturing operations.

From activating store promos to managing industrial warehouse and manufacturing operations, AIMS software is a holistic platform that powers our ESL solutions. With this software, you can easily manage all the ESLs located across all their premises and location in a centralized manner - resulting in reduced infrastructure costs, improved staff productivity, better data management, and increased revenue.

Aims Site server

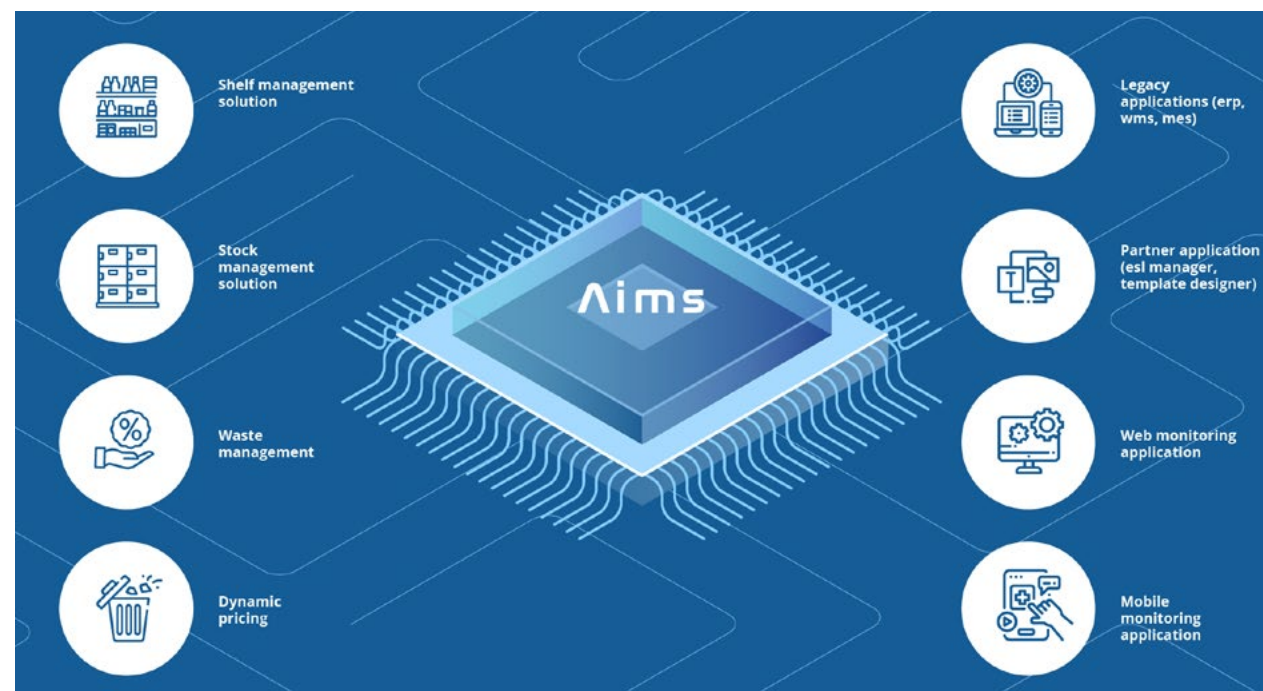
I. AIMS SITE SERVER

With our AIMS solution, you will have a solid, reliable, and fast, ESL management software at your fingertips.

With our AIMS software package, you will not only own and manage the software, but you can also scale and customize it based on your unique preferences and needs. A flexible ESL management system, for flexible scaling, for flexible companies.

AIMS Site Server Features

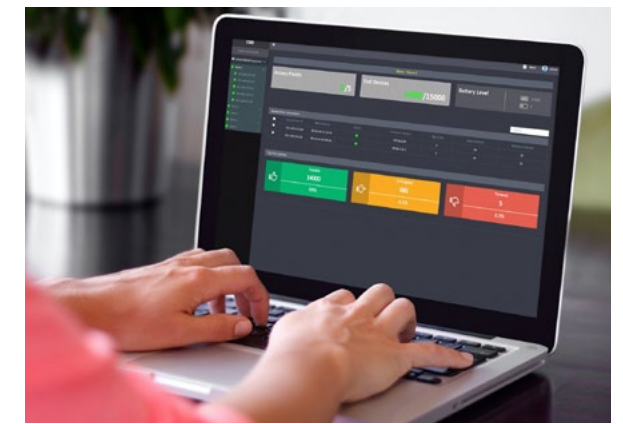
1. Easy Integration with 3rd Party Solution A modular architecture of AIMS makes it have a strong point in the integration with other IT solutions through rest API fast and easy.



2. Intuitive ESL Dashboard

AIMS has a store and central monitoring dashboards that display important information such as:

- The number and online/offline status of Gateways
- The number and online/offline status of Newton Labels
- Information/configuration of Gateways
- Detailed status of Gateways
- The number and list of labels associated with the Gateway
- Abnormal labels; such as those with low battery and bad RF signal strength
- Update status; view labels by status
- Detail information of labels and image preview.



3. Layout Designer

AIMS provides an easy and user-friendly Layout Designer tool that allows you to design the ESLs to fit the products you sell or to match your store's branding.

4. Web PDA / Mobile Application

With the web-based ESL management software for store PDA and mobile devices (Android or iOS), your staff can manage the ESLs remotely across your business premises.



Aims Central server

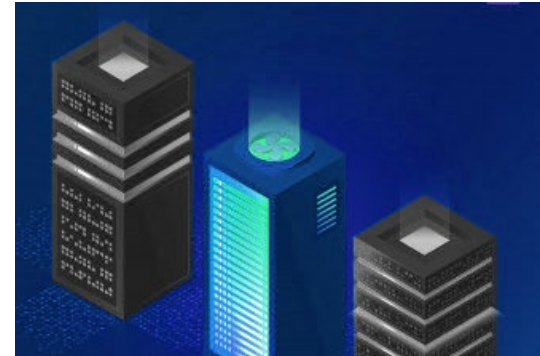
II. AIMS CENTRAL SERVER

Keep your business IT infrastructure flexible by deploying AIMS in a Central Server. By using various features in AIMS Central Server, you can enhance performance on limited resources and improve information security.

3. Parallel Processing All instances share the load equally and process all tasks simultaneously without interfering with our system processing.

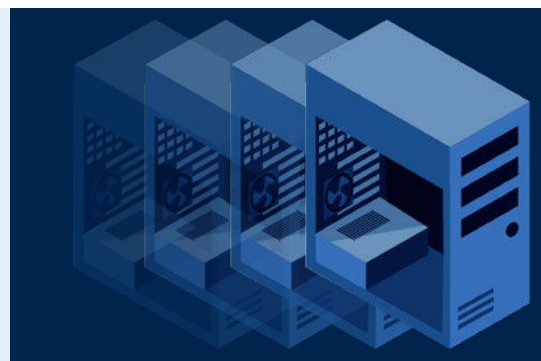


4. High Availability AIMS Central Server works as Active-Active server mode. If one system is down, the load will be shared by other existing WAS (instance of AIMS server) automatically.



AIMS Central Server Features

1. Horizontal Scalability The user has the option to horizontally scale the server. So whenever there is more load, one can add more to other PC.



2. Load Balancing AIMS Central Server can divide all loads coming to the server in an equal manner and can also be configured. This allows the server to utilize all available resources (RAM and CPU) in different instances fairly.



AIMS Central Server Security

With so much valuable data filtering through AIMS Central Server system, we also ensure that we pay attention to its security. SOLUM improves the security of our system and mitigates threats with robust data recovery and backup, user authentication, and disaster recovery.



DATA RECOVERY



BACKUP



WARNING & STATUS REPORTING



USER AUTHENTICATION



DISASTER RECOVERY

Aims SaaS

III. AIMS SaaS

SOLUM provides SaaS model using a robust, open, and flexible cloud computing platform. The primary business benefit of this is that it will not require you to maintain your own data center nor store server to manage your ESLs – all you need to do is to install the gateway, put the ESLs in place, and get a hosting service from SOLUM.

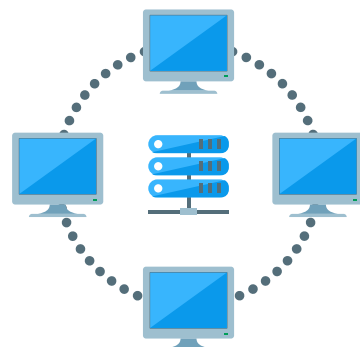
Why AIMS SaaS?



1. Reduced Implementation Time S-SaaS is already installed and configured, reducing the possibility of any issues that can get in the way of the software deployment.



2. Maximum Performance By using optimum auto-scaling criteria and resource monitoring features, AIMS Central Server minimizes the redundancy in the production environment and ensure the high performance even in the peak hours.



3. High Scalability and Integration The need to buy another server or software when your capacity increases is no longer required as we will provide you with those as the need arises.



4. Seamless Upgrades We will manage software updates and upgrades for you, eliminating the need to install or download patches. At any one time, you can be assured that you will always have the most up to date AIMS software.

AIMS SaaS Features

The AIMS SaaS comes with all the AIMS Site Server and Central Server features, but with the addition of the following:



A stable operation which works on Cloud



User Authentication / Authorization



Horizontal Scalability for multiple and heavy traffic



Fast & continuous deployment of services & features



Performance & status monitoring and History check



Easy to manage multiple location stores (price matching, stock, promotion, etc.)

AIMS SaaS Security

Security is an important factor when moving to the cloud. That's why we make sure that our software is bolstered with all the necessary security measures and controls that will ensure your important business data are safe from potential threats.

Identity Management

- User Authentication Based on Microsoft Azure Active Directory

Application Delivery Control

- Secure Sockets Layer termination and end to end SSL/TLS encryption
- WAF_v2 : Centralized protection (Faster react by centrally patching a known vulnerability)

API Authentication and Authorization

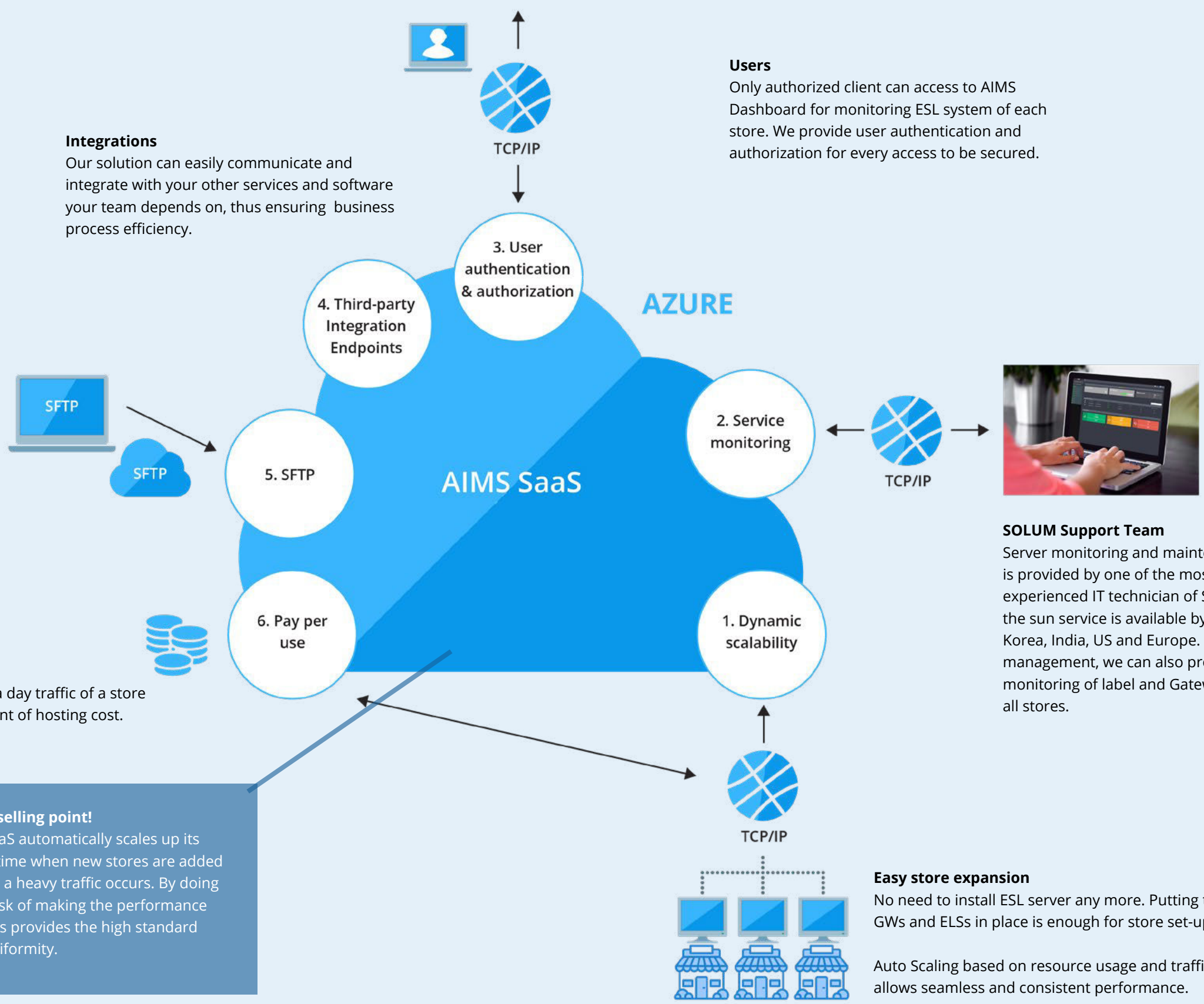
- Authenticate calls to the API to registered users only
- Track who is making the requests
- Track usage of the API - Block or throttle any requester who exceeds the rate limits
- Apply different permission levels to different users.

Privacy

- All information is stored on Azure storage and Azure SQL Database
- Both encrypt data at rest by default using Azure Disk Encryption

Logging and Auditing

- All logging data is stored on the internal location. Retention period is configurable



Integrations
Our solution can easily communicate and integrate with your other services and software your team depends on, thus ensuring business process efficiency.

Users
Only authorized client can access to AIMS Dashboard for monitoring ESL system of each store. We provide user authentication and authorization for every access to be secured.

SOLUM Support Team
Server monitoring and maintenance service is provided by one of the most skilled and experienced IT technician of SOLUM. 24/7 follow the sun service is available by service team of Korea, India, US and Europe. Not only for the server management, we can also provide a whole system monitoring of label and Gateway health check for all stores.

Cost
Pay per use based on a day traffic of a store with a minimum amount of hosting cost.

This is the key selling point!
SOLUM AIMS SaaS automatically scales up its capacity in real-time when new stores are added or when there is a heavy traffic occurs. By doing so, there is no risk of making the performance down and always provides the high standard performance uniformity.

Easy store expansion
No need to install ESL server any more. Putting the GWs and ELSs in place is enough for store set-up.

Auto Scaling based on resource usage and traffic allows seamless and consistent performance.

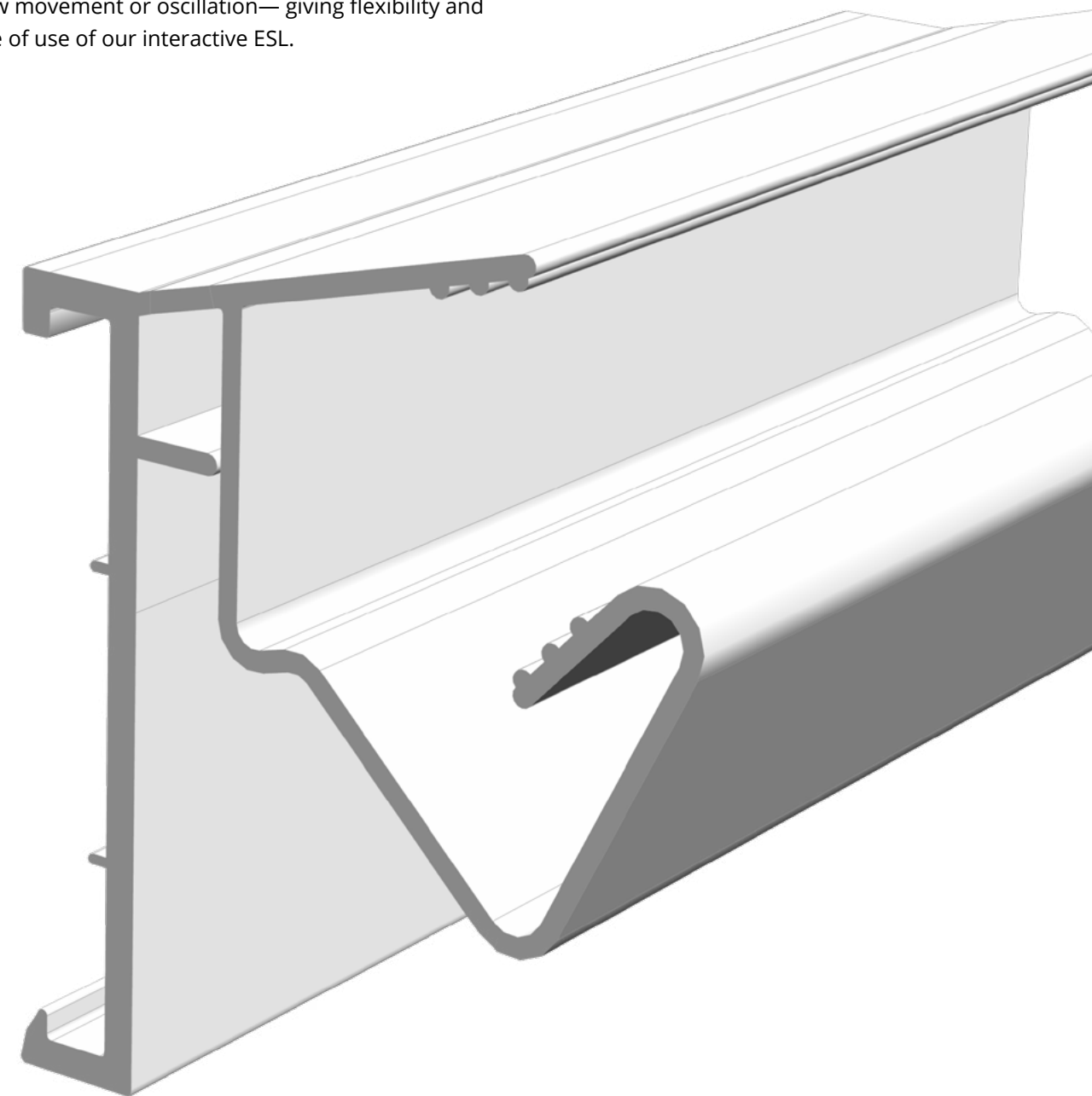
V. Accessories

SOLUM's ESL technology also comes with compatible accessories for different functions and surfaces that are available in different sizes and holds.

These accessories make for easier installation, swinging function, and different protective layers for different surfaces.

RAILS

Rails are used to place ESL's onto shelves and other surfaces. Most of the railings come with hinges to allow movement or oscillation— giving flexibility and ease of use of our interactive ESL.



RAILS

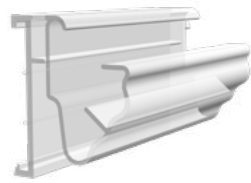


PEE 1000
Flat profile with adhesive

Perfect for front shelves and other flat surfaces.

Material: PVC
Length: 985 / 1315mm*
Color: Black / Transparent*

**You may request a customized length or color according to your needs.*



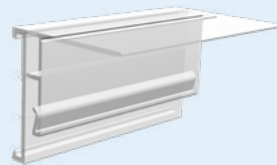
PEE 1001
Double position profile

Will fit at STOREBEST, TEGOMETALL, LINDE, and CONSAN shelves

It comes with a hinge to allow for movement and easier access and use of the ESL as it is adjustable to 2 positions. This rail has a small roof to protect the ESL from dust, etc.

Material: PVC
Length: 985 / 1315mm*
Color: Black / Transparent*

**You may request a customized length or color according to your needs.*

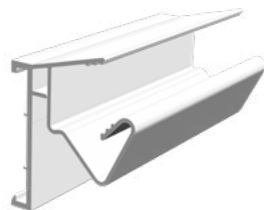


PEE 1002
Profile with an adhesive flap to glue to the shelf

This rail comes with a hinge and an adhesive flap that offers additional protection for the ESL. This will be best for wet sections or areas that usually have a lot of falling dust, for example.

Material: PVC
Length: 985 / 1315mm*
Color: Black / Transparent*

**You may request a customized length or color according to your needs.*

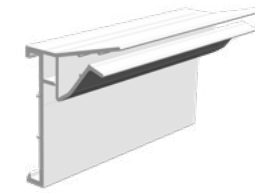


PEE 1003
Profile for wooden shelves from 8mm to 16mm thick

We created this rail specifically for wooden shelves or surfaces. It also comes with a hinge to offer movement and flexibility. This rail has a small roof to protect the ESL from dust, etc.

Material: PVC
Length: 985 / 1315mm*
Color: Black / Transparent*

**You may request a customized length or color according to your needs.*

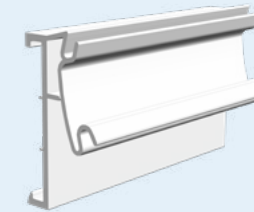


PEE 1004
Profile for glass shelves from 8mm to 10mm thick

This ESL rail, which also comes with a hinge, is made specifically for glass shelves and surfaces. This rail has a small roof to protect the ESL from dust, etc.

Material: PVC
Length: 985 / 1315mm*
Color: Black / Transparent*

**You may request a customized length or color according to your needs.*



PEE 1006
Profile for section 25 shelves

Will fit at YUDIGAR, SIDAC, and KIDER shelves

It comes with a hinge to allow for movement and easier access and use of the ESL as it is adjustable to 2 positions. This rail has a small roof to protect the ESL from dust, etc.

Material: PVC
Length: 985 / 1315mm*
Color: Black / Transparent*

**You may request a customized length or color according to your needs.*

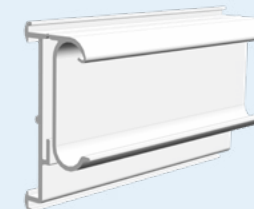


PEE 1007
Profile for section 25 shelves at CAEM and CEFLA SYSTEM

It comes with a hinge to allow for movement and easier access and use of the ESL as it is adjustable to 2 positions. This rail has a small roof to protect the ESL from dust, etc.

Material: PVC
Length: 985 / 1315mm*
Color: Black / Transparent*

**You may request a customized length or color according to your needs.*

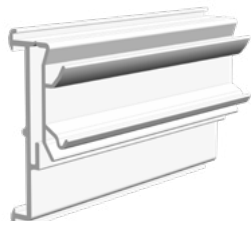


PEE 1009
Profile for BONNET NÈVÈ, LINDE, COSTAN, and ARNEG shelves

It comes with a hinge to allow for movement and easier access and use of the ESL as it is adjustable to 2 positions. This rail has a small roof to protect the ESL from dust, etc.

Material: PVC
Length: 985 / 1315mm*
Color: Black / Transparent*

**You may request a customized length or color according to your needs.*



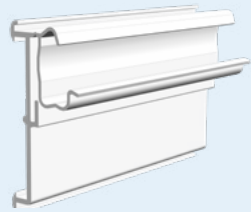
PEE 1010

Profile for INTRAC IMZ 25 shelves

It comes with a hinge to allow for movement and easier access and use of the ESL as it is adjustable to 2 positions. This rail has a small roof to protect the ESL from dust, etc.

Material: PVC
Length: 985 / 1315mm*
Color: Black / Transparent*

**You may request a customized length or color according to your needs.*



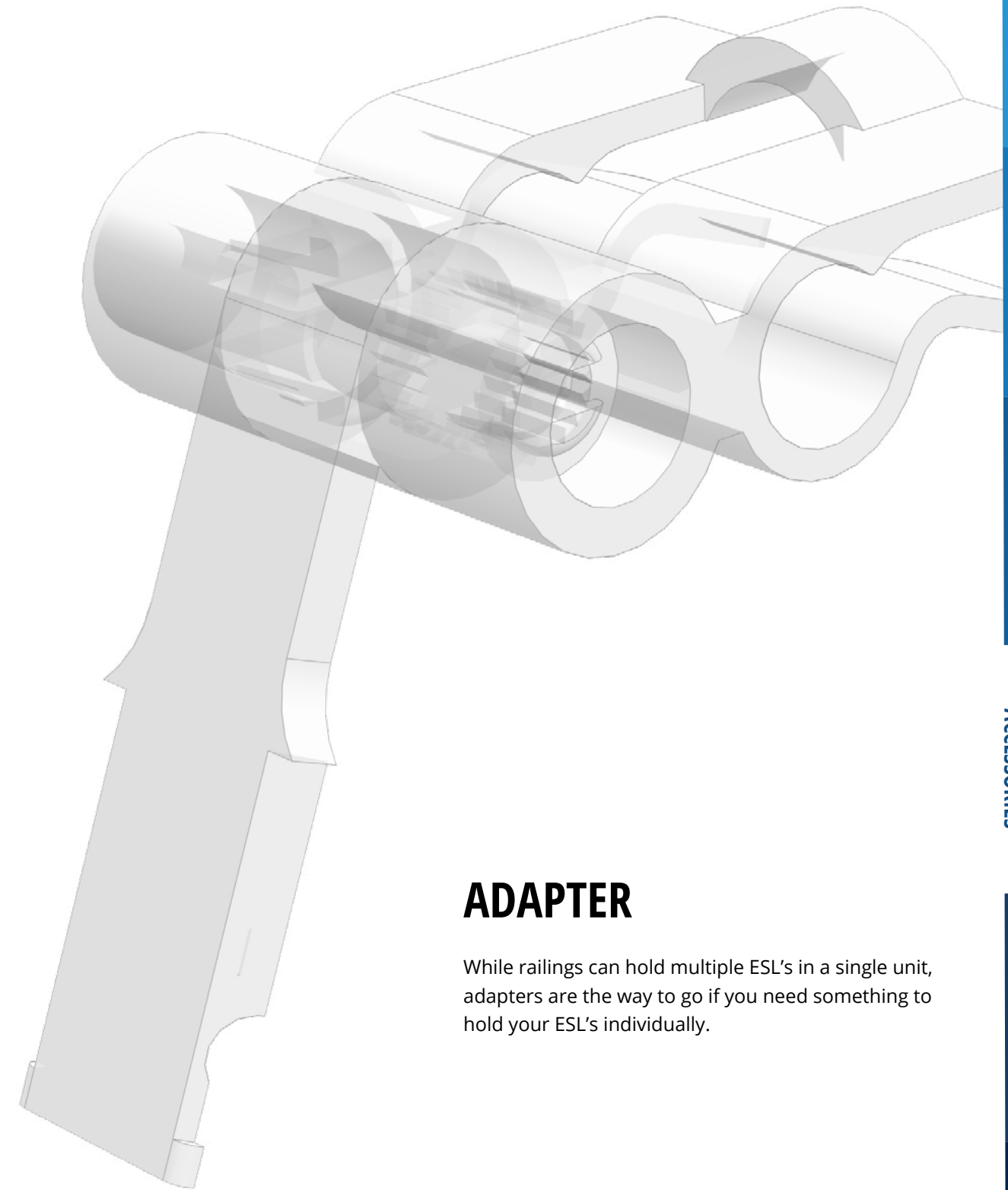
PEE 1011

Profile for CEFLA SYSTEM 10, WANZL, and CEFLA WIREPLUS shelves

It comes with a hinge to allow for movement and easier access and use of the ESL as it is adjustable to 2 positions. This rail has a small roof to protect the ESL from dust, etc.

Material: PVC
Length: 985 / 1315mm*
Color: Black / Transparent*

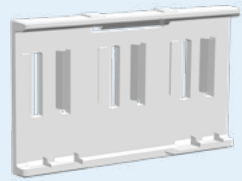
**You may request a customized length or color according to your needs.*



ADAPTER

While railings can hold multiple ESL's in a single unit, adapters are the way to go if you need something to hold your ESL's individually.

ADAPTER

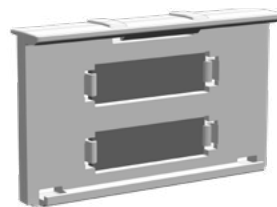


CIE 1030
Adapter

This adapter may be simple but it does the job.

Material: Polycarbonate
Color: Transparent*

**You may request a customized color according to your needs.*

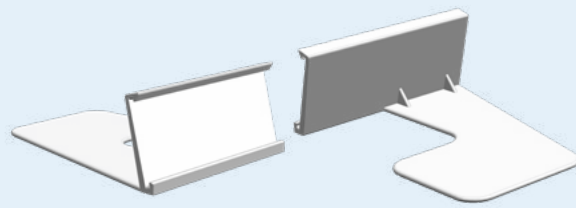


CIE 1072
Magnetic adapter

This adapter comes with an aligner which allows the label to be aligned with the upper edge of the metal shelf.

Material: Polystyrene
Color: Black*

**You may request a customized color according to your needs.*



AIE 4870
Inclined support

This adapter allows for 15° of inclination. With this, labels can sway horizontally or vertically allowing better flexibility and access for your ESL.

Material: High-impact polystyrene
Color: White*

**You may request a customized color according to your needs.*



AIE 4830
Table stand support

This adapter is best compatible with ESL's in sizes 1.6", 2.2", 2.6", and 2.9" labels.

Material: High-impact polystyrene / Polycarbonate
Height: Available in 35mm, 55mm, 100mm
Color: Black / White / Transparent*

**You may request a customized color according to your needs.*



AIE 3015
PEG hook support

This adapter is best compatible with ESL's in sizes 1.6", 2.2", 2.6", 2.8", 4.2", 6.0", and 7.5" labels. And it comes with a tilt regulator.

Material: Polycarbonate
Color: Transparent



AIE 6000
Magnetic clip for adapters

This adapter is best compatible with ESL's in sizes 1.6", 2.2", 2.6", 2.8", 4.2", 6.0", and 7.5" labels.

Material: High-impact polystyrene
Color: Black / White / Transparent*

**You may request a customized color according to your needs.*



AIE 3080
Hanging hook

This adapter is best compatible with ESL's in sizes 1.6", 2.2", 2.6", 2.8", 4.2", 6.0", and 7.5" labels.

Material: High-impact polystyrene
Color: Black / White / Transparent*

**You may request a customized color according to your needs.*



OVL 6100
Hanger for adapters and supports

This adapter is best compatible with ESL's in sizes 1.6", 2.2", 2.6", 2.8", 4.2", 6.0", and 7.5" labels.

Material: High-impact polystyrene
Color: Black / White / Transparent*

**You may request a customized color according to your needs.*



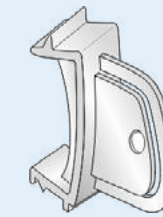
OVL 6200

Suction cup hanger for adapters and supports

This adapter is best compatible with ESL's in sizes 1.6", 2.2", 2.6", 2.8", 4.2", 6.0", and 7.5" labels.

Material: High-impact polystyrene
Color: Black / White / Transparent*

**You may request a customized color according to your needs.*

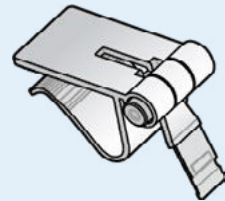


PST00262018

Clip to place promotional supplements on shelving profiles

This adapter is best for shelving profiles.

Color: Transparent



PEV00120300

Clips for shelves with 8mm to 18mm thickness

This label is best compatible with adapters, supports, and boxes for labels.

Color: Transparent

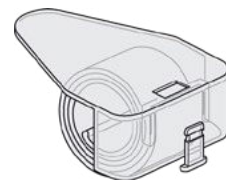


PRE00744024

Base with tilt mast and adjustable height

This adapter is best for shelving profiles.

Color: Transparent

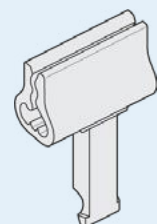


PRE00744008

Spiral clip for shelves with 5mm to 30mm thickness

This label is best compatible with adapters, supports, and boxes for labels.

Color: Transparent



PRE00744154

Clip for the placement of promotional supplements

This label is best compatible with adapters, supports, and boxes for labels.

Color: Transparent

VI. Client References

Our list of clients serves as the hallmark of our excellence as ESL partner. Since our earliest days, we've catered from start-ups to multinational companies with the same partnership approach and commitment at the core of every engagement. SOLUM always strives to achieve great successes and lasting relationships with our clients.



Sector: Super/Hyper
Country: Canada
ESL Introduction Year: 2019

Requirements

One of the main drivers for Loblaws to invest in ESL was the desire to both simplify and revolutionize their shelf labeling processes. They recognized that a fast, secure and reliable two-way wireless transmission system was needed in-store to enable real-time feedback on the status of the labels. It requested a product solution with clear shelf label visibility from the shopper's perspective. In addition, they were seeking a flexible solution for all types of stores: supermarket, hypermarket, express stores with refined design, easy to use and low infrastructure cost

Solution

SOLUM has reached an agreement after 4 months of an intensive pilot review. This includes all banners stores of the retailer coast to coast across Canada

and the installation started in January 2019. The total number of ESL tags in this roll-out will be close to 10 million per year. About 40K tags per store will be installed. The project is expected to be completed at the end of 2021. This deployment is by far, the largest ESL deployment in the history of US and Canada, not only for the groceries but also in all the retail industry.

Introduction effect

Now with ESL technology linking the POS price data with ESLs, Loblaws stores can automatically display accurate pricing information real-time and implement dynamic pricing at the shelf level. Using ESL, our client also enhanced the shopping experience by taking another step forward to digitizing the store and increasing the eco-friendliness of the store environment.



Sector: Department Store
Country: USA
ESL Introduction Year: 2017

Requirements

As a leader of technology and innovation, Macy's has been evaluating digitizing product pricing and information for years. Prior to SOLUM, all product-based electronic labels were shelf based and could not be used in the department store environments. Collaborating with and understanding Macy's requirements, SOLUM was able to design and develop the Item Label line. SOLUM Item Label not only provided the functionality of digitizing but also a new sleek design worthy of use with designer and fashion products.

Solution

SOLUM's design team worked with Macy's team to produce a vast lineup of designs for their different needs, which was ultimately narrowed down to 3 specific designs. SOLUM was able to expedite design,

development, and manufacturing of 500,000 ESLs within 3 months to meet Macy's target timeline. All this was possible because of SOLUM's in-house capabilities. For tag management, SOLUM provided the AIMS Central Server allowing Macy's to be able to centralize tag updates and pricing from a single location, helping save on infrastructure costs.

Introduction effect

Store associates no longer have to replace paper prices, they are able to focus more time on customer service and support. With SOLUM ESL, Macy's is able to update prices overnight for all stores and also schedule price changes during the day to provide dynamic store pricing, improve & efficiency, and increase sales. With the initial success, Macy's and SOLUM continue to discuss new design and application for future expansion.



Sector: Super/Hyper
Country: Germany/Global
ESL Introduction Year: 2012

Requirements

One of the main drivers in REWE's decision for ESL was the desire to both simplify and revolutionize their shelf-labeling processes. REWE recognized that a fast, secure and reliable two-way wireless transmission system was needed in-store to enable real-time feedback on the status of the labels. It requested a product solution with clear shelf label visibility from the shopper's perspective. In addition, REWE was seeking a flexible solution for all types of stores: supermarket, hypermarket, express stores with refined design, easy to use and low infrastructure cost.

Solution

SOLUM appealed for reliability as the first e-paper based ESL provider and the only company that produces and supplies ESL with its own manufacturing capability. SOLUM introduced high contrast and sharp display e-paper ESL, which solved the downsides of conventional LCD labels. With over 45 years of know-how in wireless communication technologies and in-house IC technology, SOLUM

provided advanced RF (Radio Frequency) & dual communication ESL system that meets customer's requirements for real-time updates and 100% price accuracy. In addition, SOLUM provided REWE three different types of ESL with a customized design that allows seamless integration within the existing store and shelf environment, reducing significant infrastructure investment.

Introduction effect

Now with ESL technology linking the POS price data with ESLs, REWE stores can automatically display accurate pricing information in real-time and implement dynamic pricing at the shelf level. Using ESL, REWE also enhanced the shopping experience by taking another step forward to digitizing the store and increasing the eco-friendliness of the store environment. From the continued 5 year success of ESL deployments in over 1,000 stores, REWE continues to adopt SOLUM's latest ESL technologies to further increase store innovation and promotion effects.



MIGROS

Sector: Super/Hyper
Country: Switzerland/Europe/Asia
ESL Introduction Year: 2014

Requirements

The time the Migros store personnel needed to manually place paper labels on shelves is so significant that it required them to put more important tasks such as assisting their customers aside. To help the workers be more efficient in their jobs, a solution that can implement new prices for their products in real-time and in a wireless network is warranted. Other challenges such as implementing new prices in real time and reduction of paper labels were also considered by Migros as key drivers for switching to ESL.

Solution

In 2019, Migros partnered with Bison and SOLUM ESL to get one step closer to their goal of being the most sustainable retailer in the world. By implementing SOLUM's ESL as replacement for their paper labels and placards, Migros has significantly reduced their paper waste, improved their employees' productivity, and gave their customers a more intuitive retail experience.

Introduction effect

The first benefit that Migros gained from implementing ESL is being able to switch from paper-based labels to digitalized ones. This enabled the company to free up their employees' time, allowing them to become more productive and focus on other business activities, such as customer care. As a result, employees are more motivated to fulfill their roles more than ever.

The second benefit is that the time replacing the placards on the shelves and in showcase areas has been reduced dramatically.

While still in progress, the company is looking forward to saving at least 10 to 12 hours of a week in labor, which directly translates to cost savings. Another benefit is that employees are now capable of controlling the expiry dates of the products assigned to them. Through the central server, employees can identify the products that are nearing their expiration, thus giving ample time to develop strategies to get those items sold as soon as possible.

METRO

Sector: Super/Hyper
Country: Germany/Global
ESL Introduction Year: 2014

Requirements

METRO C&C collaborated with SOLUM to introduce new ESL technology that could overcome the disadvantages of LCD ESLs that were in use at the time. METRO C&C requested a solution with easy installation and flexibility for different kinds of store formats in different countries. In addition, they also wanted a system that can update up to 50K labels fast and stable. A pilot test was decided to verify the system performance and the benefits of SoluM's new graphic labels.

Solution

In 2014, METRO decided to run a pilot project in its Leverkusen store with SOLUM's graphic label. SoluM has helped to recover ROI quickly by building a low-cost system that takes full advantage of METRO's existing infrastructure. SOLUM has proven its performance by providing a stable store system with

bi-directional communication and high-capacity/high-speed data processing technology. Above all, SOLUM has become a global strategic partner of METRO by applying customized product line-ups and solutions tailored to the needs of each store in different countries.

Introduction effect

By implementing SOLUM ESL, METRO C&C has successfully built a reliable system, and are able to provide maximum convenience to store associates and customers through accurate pricing and operational efficiency. With the ESL solution, METRO is increasing sales and building its image as a future-oriented distributor. METRO is pushing ESL expansion in its European and Asian stores with a strong partnership with SOLUM, which is continuing to provide active support and new solutions such as LED blinking labels and LBS solutions.



Sector: Super/Hyper
Country: China
ESL Introduction Year: 2018

Requirements

Alibaba needed an ESL solution provider that could help initiate their Offline Ecosystem Program. With this program, Alibaba is showing how online and offline shopping experience can merge smoothly, day and night with a 24-hour delivery service. In the next five years, Alibaba aims to equip thousands of brick and mortar stores with ESL solutions.

Solution

Alibaba has chosen SOLUM as its ESL provider for its 65 stores located in major cities across China. SOLUM deployed ESL tags with a cloud server for operation and access to an e-commerce service which is unparalleled and fast delivery service of 30 min in a radius of 3km.

Introduction effect

By implementing SOLUM ESL, Alibaba has merged their online and offline retail channels smoothly. Hema stores are now equipped with thousands of SOLUM ESLs. Mobile payment, 24-hour delivery service, in-store online product reviews, and customer tracking are some of the functions that SOLUM ESLs support in Hema stores.



Sector: Smart Factory/Industrial
Country: USA/Global
ESL Introduction Year: 2019

Requirements

With large volumes of machines being assembled and tested in Diebold Nixdorf's smart factory, it has been imperative that parts bins are replenished on time and consistent levels. Due to the increasing demand for company's hardware worldwide, the production of the facility must keep up. Empty or near-empty parts bins meant that the assembly of machines is put to halt, creating significant downtime in the production cycle.

Solution

SOLUM ESL's range of digital labels is designed and configured to automate and streamline menial yet crucial tasks in industrial factories and warehouses. Through the implementation of ESL, facility managers can reap benefits such as cost and downtime reduction, as well as shift from archaic paper-based shelf labelling to an IoT-powered business. Digital labels can be managed centrally

for this purpose. Action buttons could be used to deregister the goods or to have an overview of the inventory. Also, with larger digital signage at the end of a shelf, warehouse management becomes clear and can be flexibly adapted to changes.

Introduction effect

By implementing ESL, the team at Diebold Nixdorf smart module factory was able to develop an Electronic Wireless Kanban System for each workplace for each technician across the facility. The KANBAN database allows each worker to reorder specific materials with a push of a button. The technician simply must push a button in front of him, and the green LED tells him that the information went to the server. SAP then processes the information in the background and visualizes the order on the ESL. The label informs the worker with a red box and additionally the exact order time.



Sector: Home Improvement/Retail
Country: U.S.
ESL Introduction Year: 2020

Requirements

Ensuring efficient store operations has been extremely vital to Lowe's success as a retailer. In order to streamline their operations and improve their product pricing and promotional activities, Lowe's decided to shift from using paper shelf labels to electronic shelf labels.

The ESL solution they looked for should allow Lowe's to ensure accurate price changing during holidays which often overlap, retain their sensitive data such as product information and sales analytics in-house, and execute successful in-store promotions.

Solution

Lowe's selected SOLUM as its ESL solution provider in 2020, primarily because of the newly introduced Newton label, which provides the fastest update speed in the market today. The total number of ESL tags in this roll-out is 565,000 – all are custom-designed with Lowe's logo prominently displayed in the lower bezel. The project is expected to be completed by the 3rd quarter of 2020.

Introduction effect

Newton's update speed meant that Lowe's could change the product prices across their stores in real-time, which enabled them to develop a more sophisticated dynamic pricing strategy that helps them stay competitive.

Aside from its speed, Newton's custom bezel design has also helped Lowe's achieve consistent brand identity inside their stores. The data the ESL gathers is also helping Lowe's to gain insights about their customer behavior, allowing them to create more effective and timely promotion strategies.



reddot winner 2020
 industrial design

Thank you very much for selecting SOLUM to receive the Red Dot Product Design Award 2020!



Become a Partner

We want to partner with experts in their industry, tech-forward business leaders who value innovation and quality above all else, and companies with successful sales track records. But more than that, we want partners whose work ethic and vision align with ours.

We are setting our sights long-term.

CRITERIA

- Capability to provide onsite service nationwide.
- Capability to handle servicing for both software and hardware SOLUM ESLs.
- Willingness to undergo education and training for SOLUM ESL solutions.
- Has at least 5 years experience in retail service section
- Positive feedback from their current/previous retail customer.
- Provide service with a reasonable price but still sustainable.

WHY PARTNER WITH US

SOLUM works in collaboration with many of the world's leading retail brands. We have established a name for ourselves globally, having provided 70 million tags to over 6,000 stores in 35 countries.

BECOME A PARTNER

Align yourself with the best, and reap the benefits. Join us on SOLUM.

SOLUM

Solution provider.



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