

PX940 FREQUENTLY ASKED QUESTIONS

[Datasheet](#) | [Product Page](#)



A. ANSI Grading

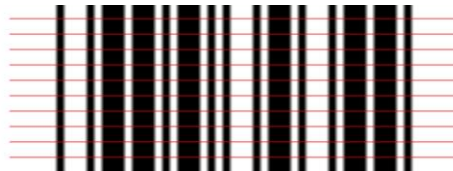
What is the difference between ISO 15415/15416 and read/No-read?

ISO 15415/15416 is a standard that describes how barcodes can be given a level of quality indicating how well the barcode can be scanned by a barcode scanner. This is also known as ANSI grading.

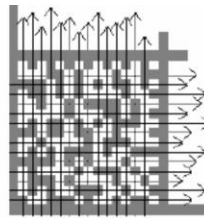
Read/No-Read is a simpler version of verification which validates that the barcode is readable by most commercial barcode scanners.

How does ANSI Grading (ISO 15415/15416) work in the printer?

For 1D barcodes, the printer will capture an image of the barcode and analyze 10 evenly distributed lines of the barcode. Parameters analyzed include contrast between black and white, whether the barcode is overheated or underheated, and whether any defects exist in the barcode. The final grade of the barcode is the average analysis of the 10 lines.



For 2D barcodes, similar parameters will be analyzed and graded accordingly, by creating a grid pattern over the barcode and analyzing it.



I see ANSI grading listed in both numeric & alphabetic values, what is the difference?

The International standard specifies a numeric basis for expressing quality grades, however, both numeric & alphabetic characters are used interchangeably. Equivalence of numeric and alphabetic quality grades:

Numeric Grade	Alphabetic Grade
3.5 to 4.0	A
2.5 to < 3.5	B
1.5 to < 2.5	C
0.5 to < 1.5	D
0.0 to < 0.5	F

.What is hardware aperture?

Hardware aperture defines the physical optical aperture of the verifier. As the verifier is not a camera, the aperture size is derived by a specific proprietary manufacturing procedure.

What is software aperture?

Software aperture is an emulation of the effective aperture size used during verification.

How is barcode size defined and what is barcode X dimension?

The size of a barcode is typically defined as '5 mil', '10 mil', etc. which is referring to the X dimension of the barcode. The X dimension of the barcode is the size of the smallest element in the barcode.

For 2D barcode the X dimension is the height and width of one module.

For 1D barcode the X dimension is the width of the narrowest bar.



How does the printer select which software aperture to use?

When printer is configured to automatic aperture size (recommended), the software aperture size is based on the barcode size that is under verification. This is the recommended aperture size for different barcode sizes as per ISO 15416:

X Dimension mm	Aperture diameter mm	Reference number
$0,100 \leq X < 0,180$	0,075	03
$0,180 \leq X < 0,330$	0,125	05
$0,330 \leq X < 0,635$	0,250	10
$0,635 < X$	0,500	20

What does it mean to have a requirement of 2.8/05/660 for a label grading?

In this example 2.8 is the overall grade of the barcode, 05 is the aperture size in mil, 660 is the peak light wavelength in nanometers. The PX940V light source is 660nm laser diode and is controlled to fall on the center of the inspection area at an angle of 45 degrees to its plane.

Can I select a different Software aperture size?

Yes, as long the user knows which aperture to use and what the impact is on the verification. Typically, application standards will dictate if there is a specific aperture size needed, but most of the time the automatic selection is used.

Example: At a lower software aperture value, the defect value will increase as the printer will see the barcode in higher focus and not necessarily the same way a scanner will see it.

Note: If overriding the aperture size then all barcodes in the label will use that aperture size, independent of the barcode size verified.

B. Verification Support

How accurate are the verification results?

Barcode verification is conforming to ISO/IEC 15146-2016 for Linear (1D) barcode verification.

Barcode verification is conforming to ISO/IEC 15415-2011 for 2-Dimensional (2D) barcode verification.

Is the verifier certified under ISO15426-1 and ISO15426-2?

Currently the verifier is not certified under these ISO standards, but this is being considered for future releases.

Which languages are supporting the new verification function?

We support all direct printing languages; Direct Protocol, IPL, DPL, and ZSim2.

We also support verification in Fingerprint smart printing applications. C# does not support verification.

Which barcode symbologies are supported for verification and read/no-read?

These 1D and 2D barcodes are supported by the verifier:

1D: Code39, HIBC39, Code128, HIBC128, ISBT128, EAN-8, EAN-13, EAN-128, UPC-A, UPC-E, Interleaved 2 of 5 (ITF-14)

2D: Datamatrix, ISBT Datamatrix.

How small barcodes can I verify?

The smallest 1D barcode size supported is 10 mil (X dimension). The smallest 2D barcode size supported is 15 mil (X dimension). There is no upper limit to the size of barcode that can be graded.

How many barcodes can I have on my label to be verified?

Maximum 32 barcodes are supported. More barcodes may slow down the printing.

What is the maximum speed I can use for verification?

The maximum speed for verification and read/no-read is 8 ips (200mm/s) for 203 and 300 dpi. The maximum speed for 600 dpi is 6 ips (150mm/s).

Is voiding of labels supported in all print modes?

Voiding is supported in all print modes. In peel off mode there may be certain media type or media length that could cause jam or get stuck if voiding.

My barcode is still readable after voiding it, how do I make sure it is not readable?

There is a configuration to change the pattern to 'Grid' which will ensure the barcode cannot be read after voiding. Do note that with high heat settings the ribbon may break or cause media jam if using the 'Grid' pattern.

My printer is automatically voiding good labels when voiding a failed label, why?

This is because the printer is ensuring the order of the labels is the same as what is sent to the printer. The user can change the printer configuration to "Non-Sequential Voiding" to only void the failed label, however, the labels may not be printed in the order they are sent. This is supported from FW version H10.15.017868 onwards.

What is the maximum label length for voiding?

The maximum retract distance is 12 inches on demand mode and 6 inches on batch mode. There is no restriction in the firmware. If the customer is using labels that require longer retract then there may be issues with ribbon wrinkle or printing on the next label.

Will there be any impact to the verification result if I pull the media?

Yes, the media should not be interfered with during printing or the result may be incorrect.

Can I send barcodes as graphics print job?

No, only barcodes sent as printer commands are supported for verification. Graphics barcodes will be ignored.

Will the verifier grade my pre-printed barcode?

No, only barcodes sent as printer language commands is supported for verification. Pre-printed barcode will be ignored.

Does the PX940 support verification of inverted barcodes (white on black)?

No, currently inverted barcodes cannot be graded by the verifier. If there is an inverted barcode in the label then the verifier will attempt to grade it and fail the barcode, and thus fail the entire label.

My application requires a higher grade than recommended ISO standard, can I change it?

Yes, there is a 'Passing Grade' configuration that can be used to set the passing threshold.

What does grade 3.5 mean on my label which has multiple barcodes?

The label grade is the lowest grade of any of the barcodes on the label. The grade for label as well as detailed information about each barcode grade can be viewed on the printer web page.

Can the verifier support OCR and OCV (Optical Character Recognition and Verification)?

No, only barcode grading is supported.

Can I do full image content verification on my labels?

No, only barcode grading is supported.

Does the verifier check data content such as GS1?

The verifier will grade the quality of the barcode and make sure data content is the same as the one sent to the printer, however, does not confirm GS1 data content.

Can I choose which barcodes on my label should be graded?

No, the printer will grade all barcodes on the label that are within specification (symbology and size), unsupported barcodes will be ignored. The passing grade for all barcodes will be the same, by default 1.5 (C) as per ISO standard.

Where can I find the result and image from my last printed label?

The latest report and image can be found on the printer internal web page, using a browser and the IP address of the printer.

How can I export the verification results to my computer?

With FW version **H10.15.017** or higher verification results can be exported in XML or CSV formats. Multiple options are available depending on customer requirements:

- Exported to a USB thumb drive using the front panel UI on the printer.
- Exported to a USB thumb drive automatically. (XML only)
- Exported manually from the printer web page. (CSV summary or XML individual report)
- Exported automatically via FTP. (XML or CSV)
- Exported using Verifier Integration Interface. (VII)

Is the verification result data automatically deleted once the memory fills up?

No, the user must regularly delete the data manually from the printer web page and restart the printer. From FW version H10.15.017868 onwards, it is not required to restart the printer after deleting the data.

How do I integrate this printer/verifier solution to my host software?

There will soon be an interface available to integrate the verification report and printer behavior to host software. This interface will be called Verifier Integration Interface (VII).

When will the Verifier Integration Interface (VII) be available?

It will be available in August 2019.

While printing label media in ladder mode & verifying 1D barcodes I am getting too many failures but the barcodes look perfect upon visual inspection?

This could be due to some unwanted media movement occurring when the media gap between labels rolls over the platen roller. This may affect the verifier system that results low ANSI grading. The verification will improve by moving the ladder barcode more than 32 mm away from the trailing edge of the label or by rotating the image 180 degrees.

Can a rectangular Datamatrix be verified?

Yes

Is PX940 able to verify 1D and 2D barcodes at all rotation?

Yes

What is the minimum height of a barcode that can be verified?

1.2mm

C. Licensing

Do I need a license to activate the verifier feature?

No, PX940 is pre-installed with perpetual license at factory.

With Op-Intel will I be able to get notification if the printer start to have low print quality? For example, I started with grades of 3.5 to 4.0. Will I be notified if the grades decreased to 3.2 to 3.5?

This will be a future feature for Operational Intelligence but it is currently not available at this time.

With Op-Intel will I be able to get notification of the when printer to clean the print head or verifier?

Print head and verifier management will be a future feature for Operational Intelligence but it is currently not available at this time.

D. Printing

What is the smallest barcode that can be printed?

PX940 is able to print 10 mil barcode with 203/300 dpi print head and 5mil barcode with 600 dpi print head. Note that the smallest barcode supported by verifier is 10 mil for 1D barcodes and 15 mil for 2D barcodes.

Does IPL support 600dpi?

IPL does not support 600 dpi and currently not in plan to be added to IPL functionality. To use PX940 in 600 dpi, customer is recommended to use Direct Protocol.

E. Hardware Support

When is phase 2 and what features are included?

Phase 2 release is targeted for August 2019. Features supported in phase 2 but not in phase 1 includes; 600dpi, rewinder, peel off, Wi-Fi, Parallel Port, Applicator Interface, 1.5" media core (media supply and rewinder take-up), 8 ips verification, Printset MC.

Can I use the printer Bluetooth for my own application?

No, Bluetooth Low Energy in the printer is only used and supported for Printset MC application.

Does the Label Taken Sensor work when I use the printer in rewind mode?

Due to the angle of the batch plate the LTS will not work when printer is setup for rewind mode.

Is cutter supported in PX940?

No, there is no plan for a cutter in this product.

Is RFID supported in PX940?

No, there is no plan for a RFID in this product.

Is PX940 able to detect when media is running low?

Yes for both 1.5 inch and 3" media supply hub.

Is PX940 able to detect when ribbon is running low or when there is no ribbon?

Yes.

F. Service and Maintenance

Do I need to use any special solvent and material to clean the verifier?

It is recommended to use a lint-free soft cloth that is soaked with isopropyl alcohol. Let the alcohol dry before using the verifier after cleaning.

Does the verifier need to be calibrated when I receive a new printer?

No, the verifier is calibrated before it is shipped from factory and does not need to be re-calibrated after shipment.

How often do I have to calibrate the verifier and how do I know when it is required?

If you have an increased occurrence of false negative failures (good barcodes being scored low) you should follow a few steps before you go to the recalibration process. First make sure that the verifier glass is clean, the print quality settings provide good visual output, and the media/ribbon is routed properly with no skew or ribbon wrinkle. If scanned image still looks good but the result is bad, then perform a calibration.

Can the verifier be used if the calibration fails?

Yes, the verifier will use the old calibration values.

Can the verifier be used if there are scratches on the glass?

If the scratches are not within the verifier scan line, the verifier can still be used.

What are the key points when conducting verifier calibration?

Clean the verifier glass, printhead and platen roller. This is to maintain the integrity of the scan image and the calibration card.

Align the calibration card at 2 locations when loading inside the media path. On the left media datum of the printer and with the diamond cutout centers aligned with the tear bar.

Secure the media guide to make sure the calibration card travels straight in the media path.

Does the calibration card expire?

Yes, 2 years from the date it is issued. The expiry date is printed on each card.

Does the PX940V printer come with a calibration card?

Starting Aug 2019, calibration card will be included with every printer sold.

How many times can the calibration be used before it must be replaced?

Calibration card is recommended to be used every 6 months and has a lifetime of 2 years.

How can I maintain the verifier unit to have optimal performance?

Cleaning the verifier during each ribbon or media roll replacement is recommended to keep the verifier glass clean. In very dirty environments the cleaning cycle frequency may need to increase.

Can I swap printhead between 203, 300 and 600dpi?

Yes, just swap the printhead and the printer will auto detect the resolution and configure itself at startup.

Why do I need to use a tool to change the printhead?

The secure printhead design is to ensure higher precision printing. The printhead need to be secured tightly.

What are the storage & handling requirements of the card?

1. When not in use, keep the calibration card inside its original packaging, away from direct light exposure and stored at room temperature.
2. Keep calibration card clean.
3. Use a dry cloth to remove any dirt if needed.
4. Do not bend the card.
5. Do not perform verifier calibration if the card is damaged.

How do I make sure my print quality is the best it can be?

Using the verifier results for the printed label there is one parameter, bar gain, which can be found in 'Verification Results' in the web page. This parameter provides information whether the bars (black) are bigger or smaller than expected. If the bar gain is positive then reduce the heat, if the bar gain is negative then increase the heat. When the bar gain is around plus minus 2% then the print quality is at its best.

Is it safe to directly look at the RED light (Verifier) and Blue Light (Front Sensor)?

The red verifier light & the blue light (front sensor) are both exempt under IEC 62471 and present no photobiological hazard.

When to replace the platen roller?

The platen roller can be used for 25 km for typical usage. When the printed barcode starts to compress/stretch, media skews horizontally or the bad print quality, these are indications to replace the platen roller.

G. Media and Ribbon Support

Can the PX940 support both ribbon coated on inside and outside?

Yes, there is a switch on the printer to change between CSI and CSO. The reason for this design is to ensure that we can retract the label longer when voiding the labels.

Does the PX940 support collapsible core on the rewinder take-up?

No, the rewinder must have a paper core installed to take up the labels or liner. The paper core is not supplied with the printer.

Does the PX940 support other ribbon rewinder options like a 1" hub?

No, we only support the collapsible core rewinder.

Which media types are supported on the printer?

Roll-fed media with outside wound is supported, as well as fan fold media. Inside wound media is not supported. Label with gaps, Tags, Ticket w Marks, and Continuous media are all supported.

Does the PX940 support smaller media liner take-up rolls?

By August 2019, there will be a factory installed option for 1.5" core on liner take up.

Does the PX940 support 600 meter ribbon?

No, the maximum ribbon length is 450 meters.

Can we use the verifier arm as a tear bar if we need to tear upwards?

No, using the verifier as a tear bar is not recommended as it may cause permanent failure in verification.

Is the Label Taken Sensor (LTS) configurable to other positions?

No, the verifier is fixed located on the left side and may not work with all media, especially special shaped labels.

Can we use any colored media and have good barcodes?

The following label background and barcode color combination is not recommended. This will result in low grading caused by low contrast between the barcode and the background.



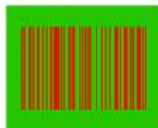
Red & White



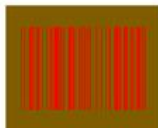
Light Brown & White



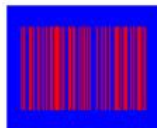
Yellow & White



Red & Green



Red & Brown



Red & Blue



Black & Green



Black & Brown



Black & Blue

Can I install the media and ribbon on the printer before shipping to customer?

No. To avoid the printer damage during transit, please make sure remove media and ribbon from the printer before shipment.

Why do narrow labels fail Media Calibration?

Make sure both rear LSS and front LSS is positioned under the labels. In case the blue LED for rear LSS and front LSS is not aligned in one line, the front module must be unlocked and then turn the sensor wheel and align the rear and front LSS sensor.

Does the PX940 support media and ribbon saving during Media Calibration?

Yes, PX940 supports retracting the media back into the printer after the media calibration is completed. To support this user needs to change the media calibration mode to "fast with retraction" or "slow with retraction". Note that this is not recommended if using wax ribbon that may smudges during retract.

What label length suited for media calibration with retract?

This feature is recommended on label length of less than 1 inch but may work well for longer media as well.

Does the PX940 support black mark on top of the media?

The PX940 only supports black mark located below the media.

Is there a fixed hanger for media supply hub?

No, PX940 only supports 1.5" and 3" rotating media supply hub.

H. User Interface

My touch screen is not working, how can I recover it?

The touch screen calibration wizard can be started from the printer internal webpage:

Services -> Screen Calibration

Does the printer web page support HTTPS?

Yes, starting from FW version H10.15.017868 onwards.

Why is the web page different compared to other Honeywell printers?

This is the new Honeywell design and other Honeywell printers will be updated to the same design.

Does the printer support audio files?

The printer is equipped with a buzzer only.

What is Print Set MC and how is it different from Printset 5?

Print Set MC is a mobile version of Printset which can manage configuration of the printer via Bluetooth LE interface. Print Set MC is supported on both Android and iOS devices. Additionally, Print Set MC includes an Augmented Reality user guide and the ability to receive printer alerts directly to your mobile phone.

I'm not able to login to the printer webpage.

If the webpage is locked by another browser then power cycle the printer and the webpage lock is released. Default login is user itadmin and password pass.

Where can I download Print Set MC for my smart device?

Print Set MC is available on Google Play & iTunes Store for download. Scan the QR code to download the software application for iOS or Android devices.

PRINT SET MC PLEASE SCAN



iOS



Android

How do I customize the background on the LCD?

Procedure to change the background:

1. Create a background image in png format of size 240 * 320 pixels (width * height) and name it background_idle.png.
2. Transfer the background image via FTP, to /home/user/display/. Then reboot the printer.

OR

3. Put the image, on a thumb drive in /display/ folder and start the printer with the thumb drive inserted.

I. Others

Will the firmware version be indicated on the outside of the box?

Yes. The factory loaded firmware version is indicated on the packaging label.

J. Commercialization and Go To Market

What is the value proposition for the PX940?

The PX940 consists of verification application software plus Edge Intelligence which provides customers with error-free printing, predictive analytics, and cost savings of \$15K per printer.

What are the top 3 issues that PX940 solves?

Integrated Label Verification Technology provides customers with error-free printing and addresses fines, chargebacks, and lawsuits associated with poor/difficult-to-scan labels.

Precision Printing with registration up to +/-0.2 mm addresses miniaturization driving printing on smaller labels.

Edge Intelligence provides customers with predictive analytics and addresses printer health and maintenance, cost reduction and increased efficiency, historical data for audits and compliance with regulatory requirements.

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What are the target verification market segments?

The PX940 targets regulated segments where fines and costs are incurred for non-compliance, such as Regulation and Life Safety (Pharmacy, Medical Devices) and Compliance (Automotive Suppliers, Perishable Food, Logistics/Warehousing, Retail Suppliers).

Are you in a regulated industry where you are subjected to fines, chargebacks, lawsuits, and other costs associated with barcodes that do not meet compliance requirements and cannot be scanned by your customers?

The PX940 family of high-performance industrial printers with integrated label verification technology provides customers with error-free printing. They were developed for customers that are subjected to fines levied for non-compliance to regulatory standards and additional costs triggered by corrective actions and returned shipments due to unreadable or unscannable barcodes. With integrated verification technology, barcodes are defect-free and 100% accurate every time. With pass/fail and ANSI grades from 1 to 4, bad labels that do not meet an established threshold are voided and a new label is reprinted.

Do you scrap labels because your current printer registration is insufficient to print on small labels?

The PX940 has registration of +/-0.2 mm. The trend toward miniaturization requires printing on smaller and smaller labels. The PX940 will print accurately on small labels edge to edge with little error tolerance. Suited for Transportation & Logistics, Pharmaceuticals & Healthcare, Shipping & Distribution Centers, Industrial Manufacturing, Automotive Parts Suppliers, and applications that are regulated and require high precision and error-free printing.

What Zebra printers does the PX940 replace?

The PX940 competitively displaces the Zebra ZT500 and ZT600 printers. The PX940 has an integrated label verifier providing customers with 100% defect-free labels. There is not a need to attach an external verifier or manually scan labels like the Zebra product offering. PX940 is the only ANSI grading inline verifier and has automatic void/reprint.

For more information visit our [website](#) or contact [Technical Support](#).