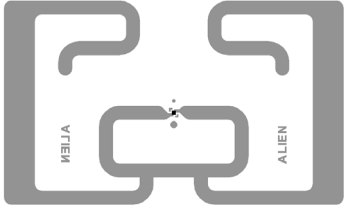




# ALN-9726 SPIDER™ 360 INLAY

The Alien Technology® ALN-9726 “Spider-360” is an (in-plane) omni-directional 30x50mm tag for use in general, retail and airline baggage applications. Unlike conventional single dipole tags this inlay does not have a null in the same plane as the tag. It is therefore useful to attach to products and merchandise where end-on tag reads are likely.



## Applications

- Retail/Apparel
- Hang-tags
- Airline baggage
- Shipping
- Joker tags
- Labels
- Document tracking

FEATURE	DESCRIPTION	BENEFIT
Orientation Agnostic	Has an unusual angular sensitivity pattern that enables tag access edge-on through a full 360°.	Can be used in applications where the tag may be completely end-on to the reader antenna i.e. the tag is laid flat and the reader is “looking” at the edge of the tag.
Worldwide frequency.	Designed to have a low turn-on-threshold and high backscatter in all UHF frequencies worldwide.	An excellent tag for use in Europe, China or the US.
Next generation Higgs™ 4 features and performance	A mass-market optimized tag with class leading read and write performance. Supports Alien’s <i>QuickWrite™</i> and <i>BlastWrite™</i>	Rapid programming of serialized tags and excellent read/write performance

## Features:

- › Designed to meet EPCglobal Gen2 (V1.2.0) and ISO/IEC 18000-6C
- › Worldwide operation in the RFID UHF bands (840-960 MHz)
- › 448-Bits of NVRAM Memory
  - 128-EPC Bits
  - 128 User Bits
  - 64 Bit Unique TID
  - 32 Bit Access and 32 bit Kill Passwords
- › Pre-Programmed with a unique, unalterable 64-bit serial number
- › User Memory can be Block Perma-Locked as well as read password protected in 32 Bit Blocks
- › Class leading read and write performance
- › *BlastWrite™* and *QuickWrite™* mass-encoding
- › Dynamic Authentication™ - anti-cloning/anti-counterfeit technology
- › Exceptional operating range, up to 11m with appropriate antenna.
- › Available in high-yield, high capacity dry/wet inlay rolls

## Product Overview:

Powered by Alien®’s break-through **Higgs™ 4 UHF RFID IC** and **innovative “Spider™ 360” antenna design**, the ALN-9726 delivers industry leading EPC Gen 2 performance and reliability for retail and apparel applications where items are tightly packed on shelves and may be read “end-on” (e.g. by a handheld reader). The orientation insensitive behavior of this tag also lends itself to baggage tracking, shipping and document tracking.

With its Higgs-4 core, the “Spider-360” delivers next generation read and write performance, yet is completely **optimized for the highest volume enterprise, retail, and general purpose applications.**

An optimized memory footprint includes a 32-bit TID, a **64-bit Unique TID for authentication** and **next generation serialization** applications, a 128-bit EPC memory bank, 128-bits of user memory for distributed data applications, and **password protected read and write** support capabilities to prevent unauthorized viewing and modification of the tag’s data.

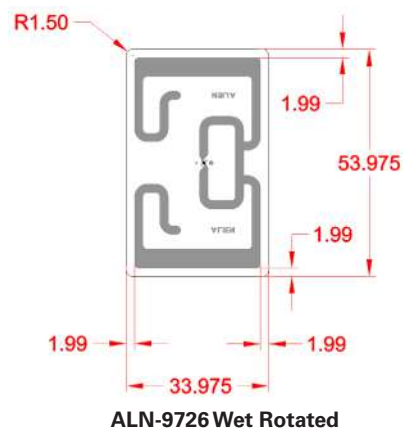
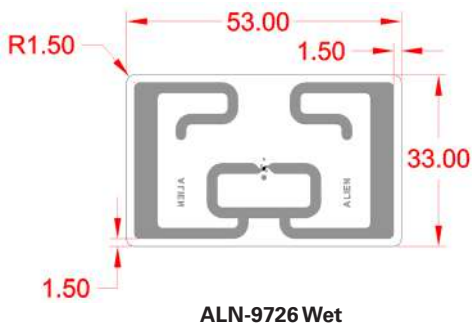
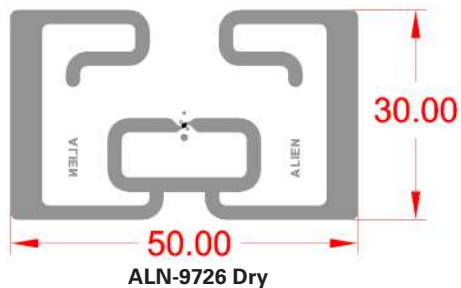
ALN-9726 inlays are World Tag compliant, enabling consistent operation across the diverse frequencies of the Americas, Europe, Middle East, Asia, and Africa.



# ALN-9726 Spider™ 360 Inlay

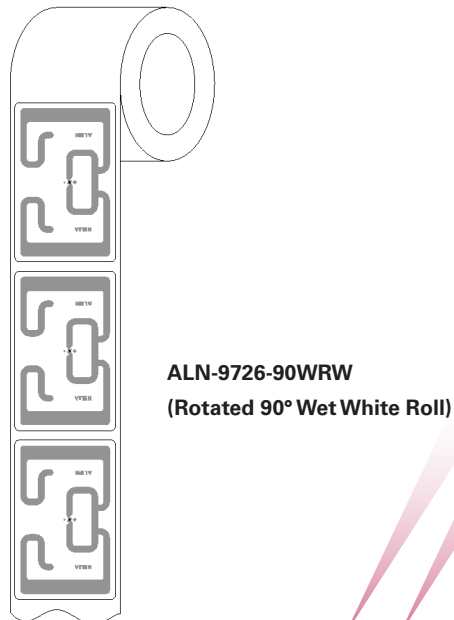
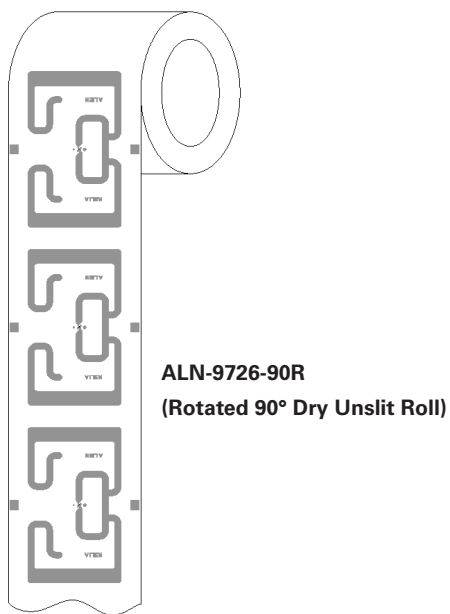
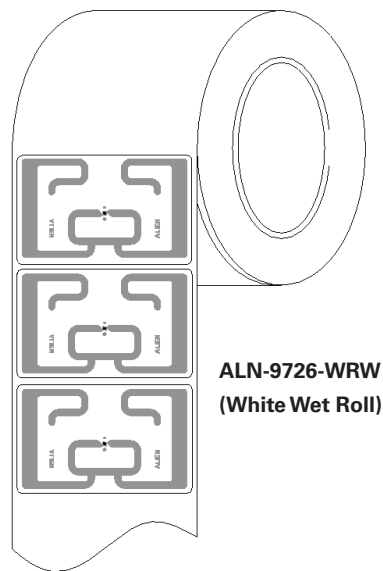
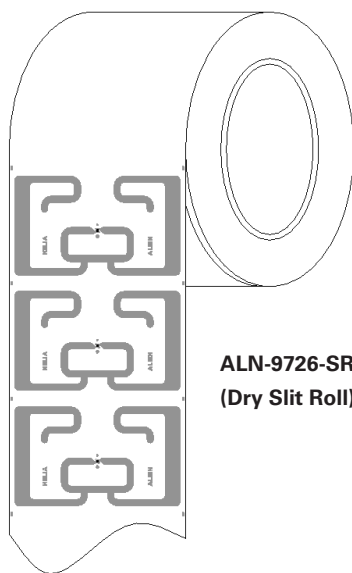
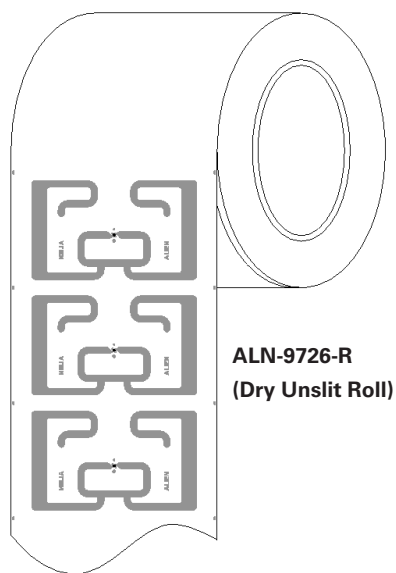
All dimensions in millimeters unless specified otherwise

## ALN-9726 Basic Dimensions



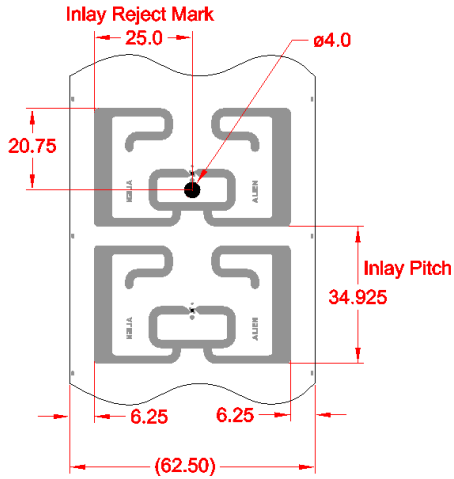
## ALN-9726 Inlay Orientation

Standard Alien Inlay rolls unwind with metal antenna side facing outward, with respect to the core.

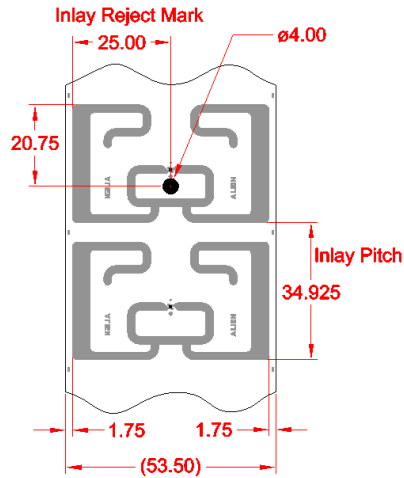




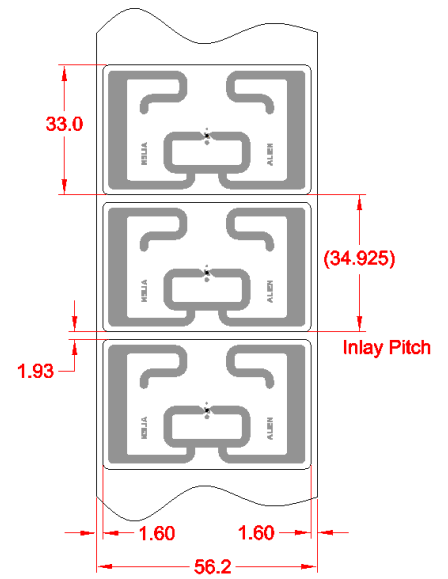
ALN-9726 Inlay Specification



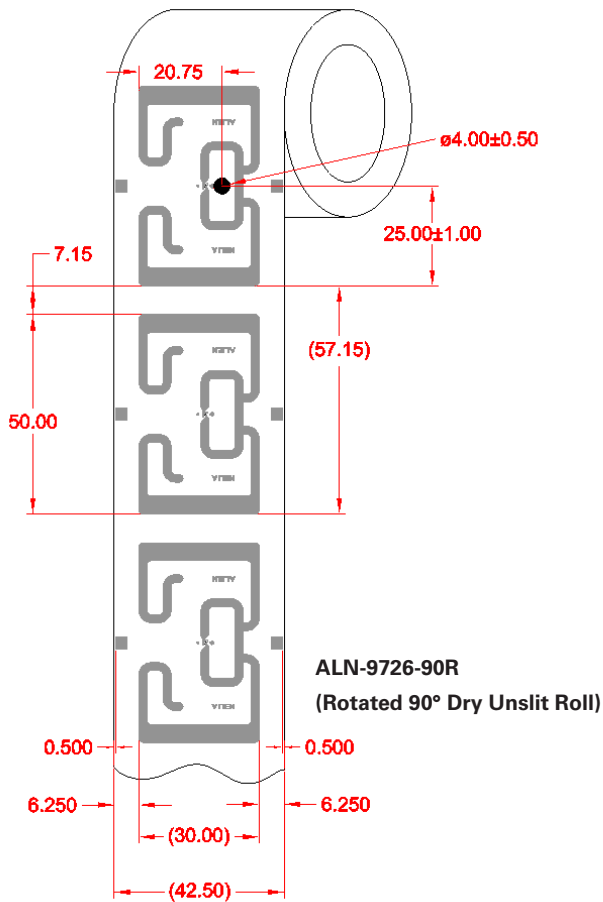
**ALN-9726-R**  
(Dry Unslit Roll)



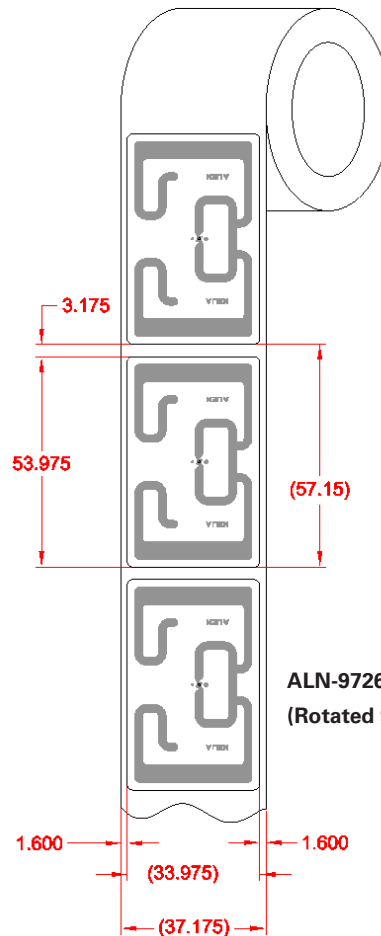
**ALN-9726-SR**  
(Dry Slit Roll)



**ALN-9726-WRW**  
(White Wet Roll)



**ALN-9726-90R**  
(Rotated 90° Dry Unslit Roll)



**ALN-9726-90WRW**  
(Rotated 90° Wet White Roll)



## ALN-9726 Inlay Stackup

DRY INLAY THICKNESS, $\pm 10\%$	
OVER ANTENNA	0.05 mm
OVER CHIP	0.25 mm

WHITE WET INLAY THICKNESS, $\pm 10\%$	
OVER ANTENNA	0.16 mm
OVER CHIP	0.36 mm

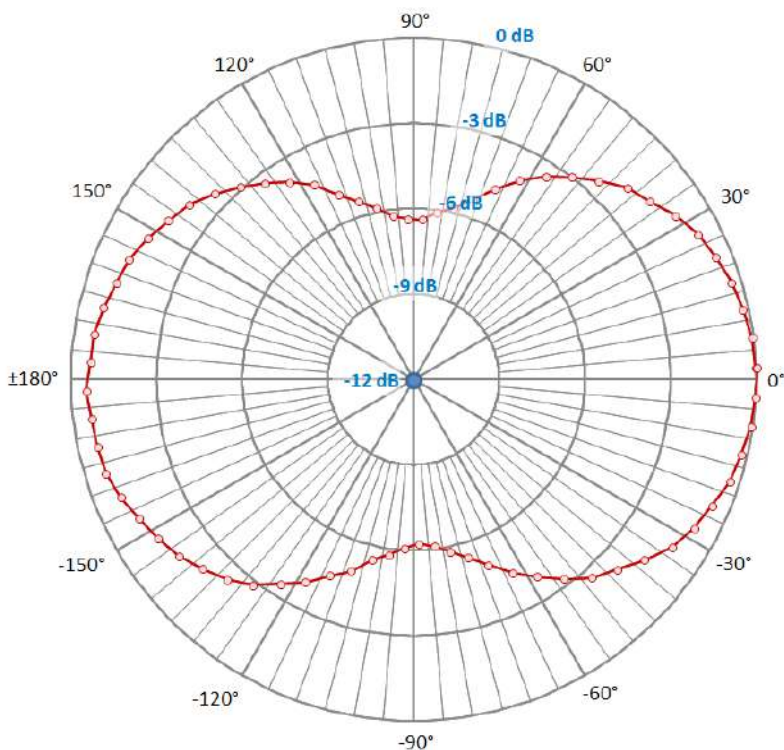


**ALN-9726-R**  
(Dry Unslit Roll)

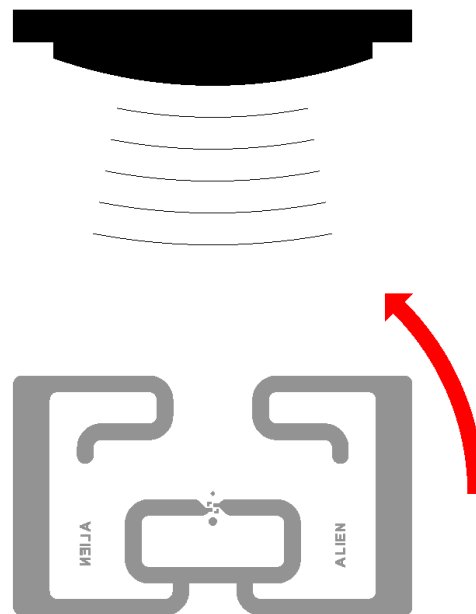


**ALN-9726-WRW**  
(White Wet Roll)

## ALN-9726 Inlay Angular Sensitivity



Angular Sensitivity  
(Relative Read Range vs. Orientation)  
**NOTE: NO NULLS**



Angular Sensitivity  
Inlay is rotated in the x, y, plane about the z axis



# ALIEN® ALN-9726 Spider™ 360 Inlay

## ALN-9726 Specifications

Dry Inlay	ALN-9726-R	ALN-9726-SR	ALN-9726-90R-
Antenna Width	1.97" [50mm]		1.18" [30mm]
Antenna Length	1.18" [30mm]		1.97" [50mm]
Web Width	2.46" [62.5mm]	2.11" [53.5mm]	1.67" [42.5mm]
Web Pitch	1.375" [34.925mm]		2.25" [57.15mm]
Core Width	2.46" [62.5mm]	2.11" [53.5mm]	1.67" [42.5mm]
Core ID	6" [152.4mm]*		
Core Material	Fiberboard		
Inlays per Roll	12,500 Nominal	14,000 Nominal	7,500 Nominal
Maximum Roll OD	< 12" [304.8mm]		
Roll Labeling Data	Roll #, Quantity		

Wet Inlay	ALN-9726-WRW	ALN-9726-90WRW
Inlay Width	2.09" [53mm]	1.34" [33.98mm]
Inlay Length	1.30" [33mm]	2.125" [53.98mm]
Web Width	2.21" [56.2mm]	1.46" [37.18mm]
Web Pitch	1.375" [34.925mm]	2.25" [57.15mm]
Core Width	2.21" [56.2mm]	1.46" [37.18mm]
Core ID	6" [152.4mm]*	
Core Material	Fiberboard	
Inlays per Roll	12,500 Nominal	7,500 Nominal
Maximum Roll OD	< 16" [406.4mm]	
Roll Labeling Data	Roll #, Quantity	
White	TT Printable White Film Only	
Overlay Adhesive	General Purpose Permanent	
Inlay Adhesive	General Purpose Permanent	
Adhesive Application Temperature	> +25°F [-4°C]	
Adhesive Service Temperature	-40°F to +200°F [-40°C to +93.3°C]	
Release Liner	40# SCK	

Environmental	
Shelf Life	Dry Inlays: 5 years at +77°F [+25°C] @ 40% RH Wet Inlays: 2 years at +77°F [+25°C] @ 40% RH
Recommended Storage	+77°F [+25°C] @ 40% RH
Storage Limits	-13°F to 122°F [-25°C to +50°C] 20% to 90% RH Non-condensing
Operating Limits	-40°F to +158°F [-40°C to +70°C] 20% to 90% RH Non-condensing
Bend Diameter	> 1.97" [50mm]
Pressure	< 5N/mm <sup>2</sup>
Drop Resistance	Per ASTM D5276
Write Cycles	100,000 @ 25°C
RoHs	2002/95/EC, 2005/618/EC, 2011/65/EU Compliant
REACH	1907/2006/EC Compliant (SVHC and ECHA)
ESD Limit- HBM / CDM	5.0kV / 1.5kV

RFID	
Protocols Supported	ISO/IEC 18000-6C EPCglobal Class 1 Gen 2
Integrated Circuit	Alien Higgs-4
Operating Frequency	840-960 MHz
EPC Size	128 Bits
User Memory	128 Bits
TID	32 Bits
Unique TID	64 Bits
Access Password	32 Bits
Kill Password	32 Bits

\* Shipped with 6" to 3" plastic core adapter

July 5, 2016

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HANDLING PRECAUTIONS Observe standard handling practices to minimize ESD.

DISCLAIMER Application recommendations are guidelines only - actual results may vary and should be confirmed. This is a general purpose product not designed or intended for any specific application.

This product is covered by one or more of the following U.S. patents: 7967204, 7931063, 7868766, 7737825, 7716208, 7716160, 7688206, 7659822, 7619531, 7615479, 7598867, 7580378, 7576656, 7562083, 7561221, 7559486, 7559131, 7554451, 7551141, 7542301, 7542008, 7531218, 7522055, 7500610, 7489248, 7453705, 7425467, 7417306, 7411503, 7385284, 7377445, 7364084, 7353598, 7342490, 7324061, 7321159, 7301458, 7295114, 7288432, 7265675, 7262686, 7260882, 7253735, 7244326, 7218527, 7214569, 7199527, 7193504, 7173528, 7172910, 7172789, 7141176, 7113250, 7101502, 7080444, 7070851, 7068224, 7046328, 6998644, 6988667, 6985361, 6980184, 6970219, 6952157, 6942155, 6933848, 6927085, 6816380, 6780696, 6731353, 6693384, 6683663, 6665044, 6657289, 6623579, 6606247, 6606079, 6590346, 6586338, 6566744, 6555005, 6527964, 6479395, 6468638, 6420266, 6316278, 6291896, 6281038. Other patents pending.

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