

**BRADY L-2588-25C UHF RFID ON-METAL LABEL**

TDS No. L-2588-25C  
Effective Date: 25/11/2020

**Description:**

UHF RFID on-metal label is a high performing and incredibly versatile label recommended for tagging on-metal, liquids, plastic, and other typically hard to read products and surfaces.

**Details:**

**Material Specifications:**

Face Material	Polyester
Adhesive	Permanent acrylic adhesive
Finishing	White
Antenna	Aluminium
IC to antenna construction	Chip bonded to antenna using Anisotropic Conductive Film adhesive
Tag base material	Clear PET

**General Specifications:**

Applications	UHF RFID on-metal label is recommended for tagging on-metal, liquids, plastic, and other typically hard to read products and surfaces. Common applications include health and beauty, beverages and snacks, miscellaneous item level consumables, and on-metal applications.
Print Technology	Thermal transfer print, including RFID encoding.
Recommended Ribbon	Brady Series R7961
Operating Temperature	-40 °C to 85 °C
Regulatory/Agency Approvals	For information on the Weee-RoHS compliance status for a Brady Product go to one of the following websites: In Canada: <a href="http://www.bradycanada.ca/weee-rohs">www.bradycanada.ca/weee-rohs</a> In Europe: <a href="http://www.bradyeurope.com/rohs">www.bradyeurope.com/rohs</a> In Japan: <a href="http://www.brady.co.jp/products/labelsuse/rohs">www.brady.co.jp/products/labelsuse/rohs</a> All other regions: <a href="http://www.bradyid.com/weee-rohs">www.bradyid.com/weee-rohs</a>

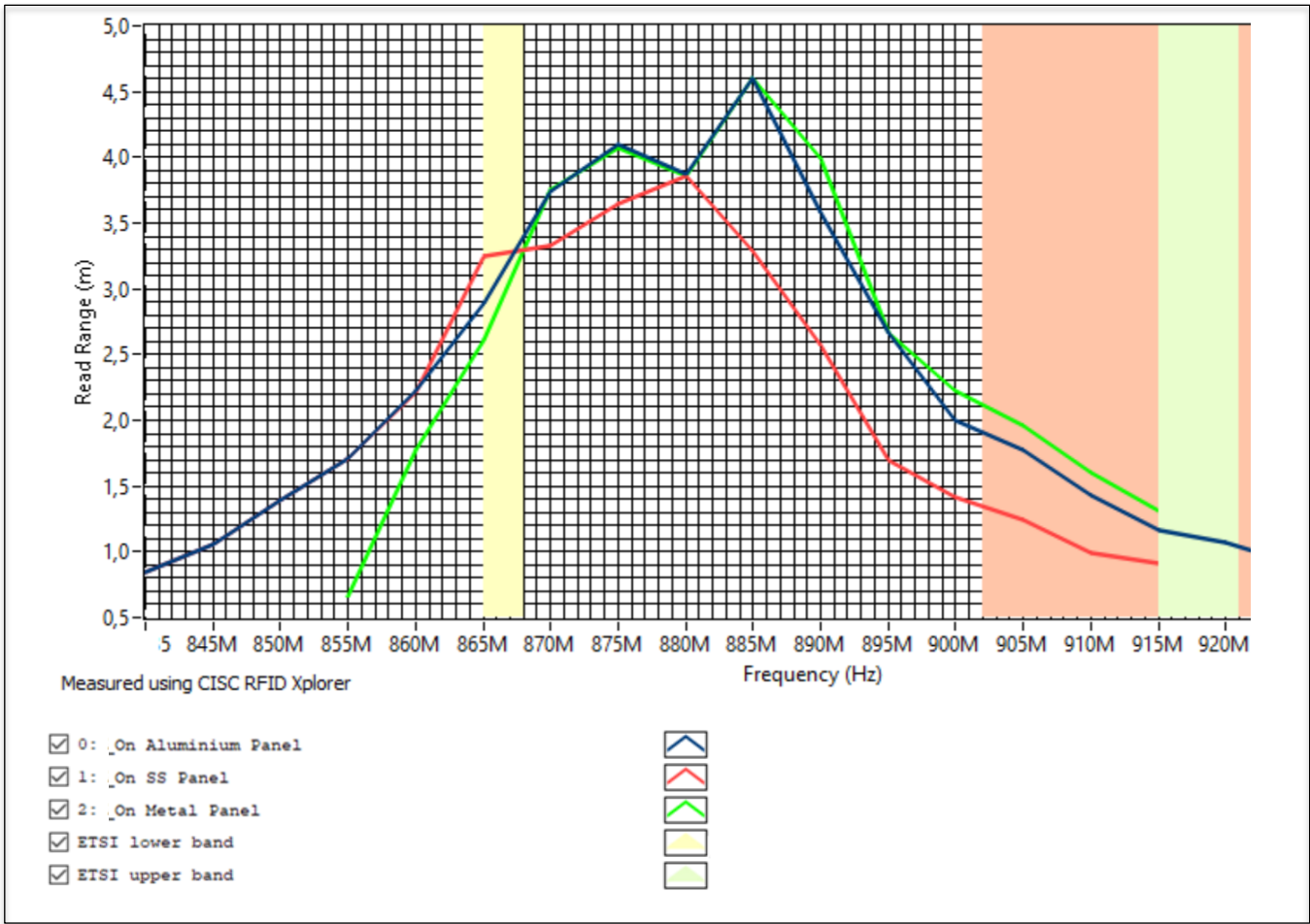
**Electronic Specifications:**

IC / Chip	NXP UCODE 8
Operating Frequency	Global 860 - 960 MHz (ETSI band)
Supported Standard	ISO/IEC 18000-63 Type C
EPC Memory	128 bits
TID Memory	96-bit Tag Identifier (TID) factory locked 48-bit unique serial number factory-encoded into TID

**Read Range:**

Details RFID performance in ETSI lower bandwidth:

PERFORMANCE PROPERTIES	REGULATION	TYPICAL RESULTS
RFID Read range on aluminium panel	ETSI	up to 2.9m
RFID Read range on SS panel	ETSI	up to 3.2m
RFID Read range on metal panel	ETSI	up to 2.6m



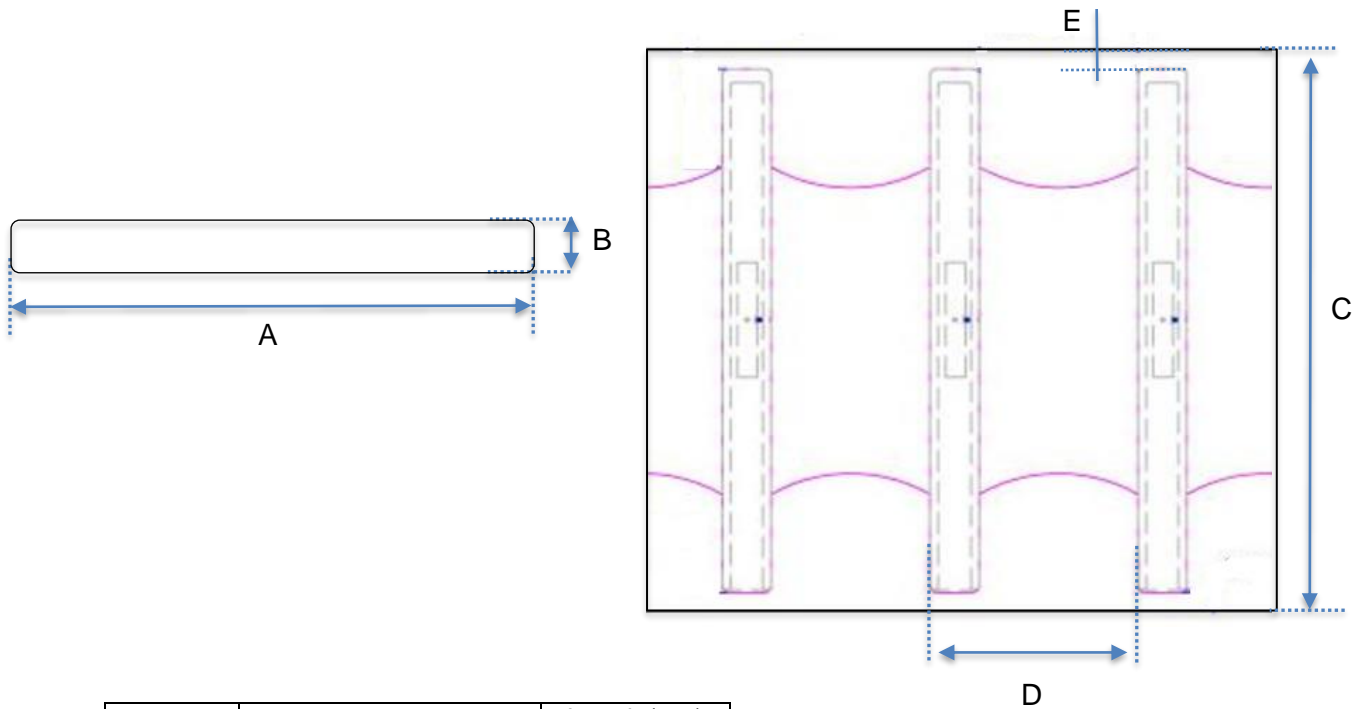
**Label Dimensions:**

Metric (mm)		
Width	Length	Thickness Total (with chip)
64.00	6.00	0.74

**Label Mass (including antenna and chip)**

Label Mass (g)
0.14

**Dimensions (mm)**



		Length (mm)
A	Tag Width	64.00
B	Tag Length	6.00
C	Web Width	68.64
D	Tag to Tag Pitch	25.40
E	Web edge to label	2.32

**Delivery and Packaging Specifications:**

RFID labels per roll	500
Rolls in package	1
Winding	RFID labels out
Inspection and delivered tags	100% inspected, 500 good RFID labels per roll
Bad Tags Marked	Yes

**Label Performance:**

**Details:**

PHYSICAL PROPERTIES	TEST METHODS	AVERAGE RESULTS
Thickness	ASTM D 1000 -Total (excluding liner)	0.029 inch (0.74 mm)
Adhesion to: -Metal	FTM 2 20 minute dwell 24 hour dwell	56 N/100mm (51 oz/inch) 60 N/100mm (55 oz/inch)
Loop Tack to: -Metal	FTM 9	80 N/100mm (73 oz/inch)

Performance properties tested on samples printed with the Brady Series R7961 ribbons. Printed samples were laminated to aluminum panels and allowed to dwell 24 hours before exposure to the indicated environments.

ENVIRONMENTAL RESISTANCE			
PERFORMANCE PROPERTIES	TEST METHODS	EFFECT TO PRINT IMAGE	EFFECT TO CHIPS
High Service Temperature	30 days at 120°C	No visible effect	Readable
Low Service Temperature	30 days at -80°C	No visible effect	Readable
Short Term High Service Temperature	5 minutes at 140°C and 160°C	No visible effect at 140°C, at 160°C print remains intact - face material comes off and 'curls' up	Readable

Humidity Resistance	30 days at 37°C, 95% relative humidity	No visible effect	Readable
UV Light Resistance	30 days in Xenon Test Chamber	No visible effect	Readable
Weatherability	ASTM G155, Cycle 1 30 days in QUV accelerated weathering tester	Slight yellowing	Readable
Abrasion Resistance	Taber Abraser, CS10 grinding wheels, 250 g/arm (Fed. Std. 191A, Method 5306), 150 cycles	Print still legible after 50 cycles, hardly legible after 100 cycles, and not legible after 150 cycles	No effect to chip. Chip still readable after 150 cycles
Salt Fog Resistance	ASTM B117 30 days in 5% salt fog solution chamber	No visible effect	Readable

PERFORMANCE PROPERTIES		CHEMICAL RESISTANCE	
Samples were printed with the Brady Series R7961. Samples were laminated to aluminum panels and allowed to dwell 24 hours prior to testing. Testing was conducted at room temperature and consisted of 30 minutes immersions in the specified test fluid. After immersion, the samples were removed from the test fluid and the printed image rubbed 10 times with a cotton swab saturated with the test fluid. The rating scale below shows the effect to the quality of the print for each sample.			
CHEMICAL REAGENT	EFFECT TO PRINT WITHOUT RUB	EFFECT TO PRINT WITH RUB	EFFECT TO CHIPS
Ethanol	1	1	Readable
Toluene	1	5; the film comes off and separated from the foam	Readable
Isopropyl Alcohol	1	1	Readable
DOT 4 Brake Fluid	1	5	Readable
Skydrol® 500B-4	1	5	Readable
Hydrochloric Acid 37%	1	1	Readable
Sodium Hydroxide 10%	1	1	Readable

**Rating Scale:**

- 1= no visible effect
- 2= slight smear or print removal, detectable but minimal smear
- 3= moderate smear or print removal (print still legible)
- 4= severe smear or print removal (print illegible or just barely legible)
- 5= complete print and/or topcoat removal
- NP= print removed prior to rub

**Shelf Life:**

Shelf life is one year from the date of receipt for this product as long as this product is stored in its original packaging in an environment below 23 ± 2°C and 50 ± 5% RH. It remains the responsibility of the user to assess the risk of using this product. We encourage customers to develop testing protocols that will qualify a product's fitness for use in their actual application.

**References:**

ASTM: American Society for Testing and Materials (U.S.A.)  
All S.I. Units (metric) are mathematically derived from the U.S. Conventional Units

**Note:** All values shown are averages and should not be used for specification purposes.

Test data and test results contained in this document are for general information only and shall not be relied upon by Brady customers for designs and specifications, or be relied on as meeting specified performance criteria. Customers desiring to develop specifications or performance criteria for specific product applications should contact Brady for further information.

Product compliance information is based upon information provided by suppliers of the raw materials used by Brady to manufacture this product or based on results of testing using recognized analytical methods performed by a third party, independent laboratory. As such, Brady makes no independent representations or warranties, express or implied, and assumes no liability in connection with the use of this information.

**WARRANTY**

Brady products are sold with the understanding that the buyers will test them in actual use and determine for themselves their adaptability to their intended uses. Brady warrants to the buyers that its products are free from defects in material and workmanship, but limits its obligation under this warranty to replacement of the product shown to Brady's satisfaction to have been defective at the time Brady sold it. This warranty does not extend to any persons obtaining the product from the buyers. This warranty is in lieu of any other warranty, express or implied, including, but not limited to, any implied warranty of merchantability or fitness for a particular purpose, and of any other obligations or liability on Brady's part. Under no circumstances will Brady be liable for any loss, damage, expense, or consequential damages of any kind arising in connection with the use, or inability to use, Brady's products.

Copyright 2020 Brady Worldwide, Inc. | All Rights Reserved

Material may not be reproduced or distributed in any form without written permission.

---

Brady EMEA | Lindestraat 20 | 9240 Zele | Belgium | Tel: +32 (0) 52 45 78 11 | Fax: +32 (0) 52 45 78 12