2 Product Tote Label

A Product Tote Label is used to uniquely identify a Product Tote as well as the orientation of the Product Tote with respect to the barcode scanner. Each Product Tote Label is permanently affixed to a Product Tote.

Two (2) Product Tote Labels are used to uniquely identify one (1) Product Tote within the domain of the Warehouse Control System. Each Product Tote is expected to be captive within the Materials Handling System for the Sydney Fashion Distribution Centre.

Each Product Tote is to be uniquely identified by a 7 digit Unit Load Identifier (ULID), which is to be represented on two (2) permanently affixed labels. Both labels are to comply with the design given in this document, and have the same 7 digit value encoded both in the barcode and as human-readable text. The 7 digit ULID is suffixed by a 'side' indicator value of either '1' or '2', where the 'side' indicator on each of the two (2) labels on a Product Tote has a different value.

Each Product Tote Label is to comply with the design specified below.

2.1 Label Stock

The requirements for the Product Tote Label stock are as follows:

Table 3 Product Tote Label Stock

Property	**Value**
Adhesive	High Tack (i.e. permanent)
Background reflectance	≥ 70%
Colour	White
Dimension	50 mm x 50 mm
Finish	Matt / Gloss
Material ①	Polymer / Polypropylene
Thermal Sensitive ①	No
Orientation	n/a

① Dematic preference is for thermal insensitive Polypropylene stock.

2.2 Label Design

The only information on the Product Tote Label is the Unit Load Identifier (ULID), and 'side' indicator, presented as a barcode. The ULID is presented as human-readable text, but the 'side' indicator is not present in the human-readable text.

NOTE: If the 'Side' indicator is relevant to an operation, then the barcode needs to be scanned. Other than this, the human-readable text uniquely identifies the Product Tote to an operator.

The design is shown below where the horizontal and vertical rulers are in units of centimetres, and the arrow at the top left corner indicates the expected direction of printing during production.

Figure 1 Product Tote Label Design

Printing the barcode in the indicated direction (i.e. 'picket fence') is faster and more accurate with less dependency on the accuracy of the stepper motor used to advance the label stock during production.

The optional Bearer Bar makes it easy to spot missing pixels during the production process, but has no impact on the operational use of the label.

The above design can be reproduced by sending the following ZPL script to a barcode label printer having a print density of 203 dots per inch (dpi).

```
^XA
^LRN
^BY4^FO43,8^BCN,319,N,N,N^FD>;91234561^FS
^A0N,60,80^FO43,335^FD 9123456 ^FS
^FO8,388^GB383,3,3,B,0^FS
^PQ1,0,1,Y
^XZ
```

2.3 Field Data

The barcode printed on the label has the properties given below.

Table 4 Product Tote Label Barcode Definitions

Property	Barcode Value
Bar Colour	Black
Bar Height	40 mm
Data Content	7 digit ULID + 1 digit Side
Data Source	Static definition
Orientation	Picket Fence
Placement	<as per Figure 1>
Quiet Zone	≥ 5 mm
Symbology	Code 128 Subset C
X-Value	0.508 mm

The 7 digit ULID is qualified as follows:

- A prefix digit of ‘9’
- A unique 6 digit value in the range of ‘000000’ .. ‘999999’
- The supplier is to ensure that the 6 digit values are unique across all Product Totes.

The 1 digit Side indicator is qualified as follows:

- A 1 digit value with the value of ‘1’ or ‘2’
- The supplier is to ensure that the ‘Side’ Indicator is distinct on either side of each Product Tote.

The human-readable text printed on the label has the properties given below.

Table 5 Product Tote Label Human-Readable Text

Property	Value
Content	7 digit
Font	Arial / Triumvirate (or equivalent)
Orientation	<as shown in Figure 1>
Position	<as shown in Figure 1>
Size	<as shown in Figure 1>

2.4 Label Production

Each label should be produced in accordance with the properties listed below.

Table 6 Product Tote Label Production

Property	Value
Bar Reflectance	≤ 15%
Barcode Quality	≥ ANSI Grade B
Symbol Contrast (PCS.)	≥ 55%
Technology ①	Direct Thermal or Thermal Transfer
Text Colour	Black
Thermal Transfer Ink ①	Wax or Wax-Resin or Resin

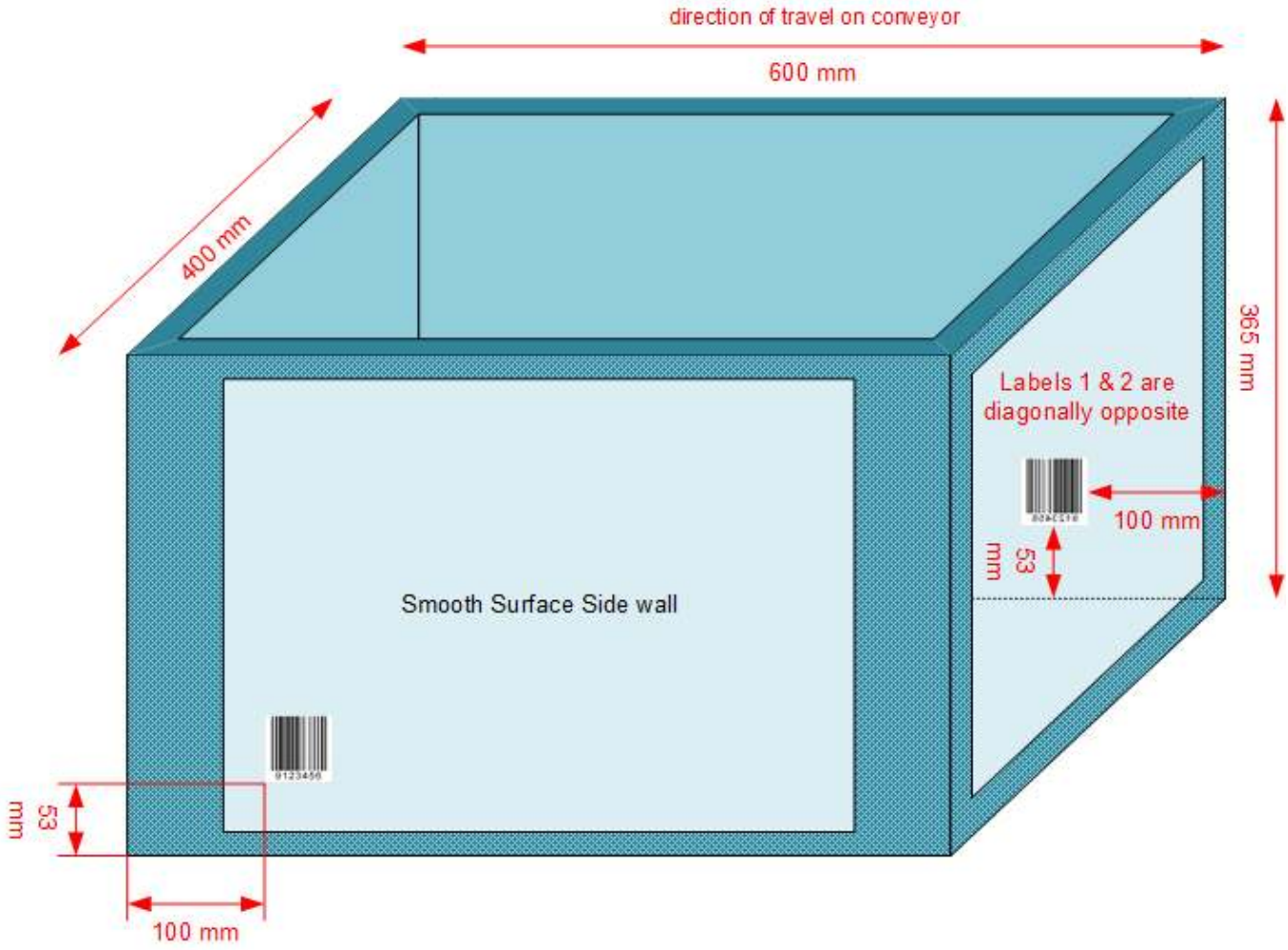
① Dematic preference is for the Thermal Transfer of Resin.

2.5 Label Placement

During manufacture, each Product Tote Label is manually affixed to each side of a Product Tote. Each label is to be affixed without wrinkle and in such a manner that the label is presented to as shown below in Figure 1.

NOTE: The placement of each label is to have a tolerance of ±3 mm, where the top / bottom edge of each label is to be parallel to the top / bottom of the Product Tote Label. The target area for each label is within the recessed Smooth Surface Side Wall, and is identified by a 0.5 mm raised indentation.

Figure 2 Product Tote Label Placement



Refer to drawing P06418L321 (i.e. reference document 3) for more details.

3 Order Carton Label

An Order Carton Label is used to uniquely identify an Order Carton. The lifespan of the Order Carton Label spans from when the Order Carton is erected until the Order Carton leaves the facility. Once a Carrier-specific Despatch Label (see Section 5) is affixed to the Order Carton there is a 1:1 correlation between the Order Carton Label and the unique Despatch Label identifier.

NOTE: Order Cartons originating in the Bulk Store and/or Pick Faces will not have an Order Carton Label assigned or affixed. Unique identifiers for these Order Cartons are facilitated by the dynamic labelling summarised in Section 1.4.

Two (2) Order Carton Labels are used to uniquely identify one (1) Order Carton within the domain of the Warehouse Control System. The Order Cartons are not captive within the Materials Handling System for the Sydney Fashion Distribution Centre, but can be recirculated and re-used until the Order Carton exits the facility or until the Order Carton is no longer fit for purpose.

Each Order Carton is to be uniquely identified by an 8 digit Unit Load Identifier (ULID), which is to be represented on two (2) permanently affixed labels. Both labels are to comply with the design given in this document, and have the same 8 digit value encoded both in the barcode and as human-readable text.

The Order Carton Label is automatically printed-and-applied by a Label Printer Applicator (LPA) to each newly erected carton. The carton becomes an empty Order Carton once the Order Carton Labels are printed, applied and validated. The Warehouse Control System will assign the ULID to each newly erected carton.

Each Order Carton Label is to comply with the design specified below.

3.1 Label Stock

The requirements for the Order Carton Label stock are as follows:

Table 7 Order Carton Label Stock

Property	Value
Adhesive	High Tack (i.e. permanent)
Background reflectance	≥ 70%
Colour	White or Yellow
Dimension	70 mm x 40 mm

Table 7 Order Carton Label Stock

Property	Value
Finish	Matt / Gloss
Material ①	Paper / Polymer / Polypropylene
Thermal Sensitive ①	No
Orientation	Landscape (i.e. wide-edge leading)

① Dematic preference is for thermal insensitive Paper stock.

3.2 Label Design

The only information on the Order Carton Label is the Unit Load Identifier (ULID), presented as a barcode and as human-readable text.

The design is shown below where the horizontal and vertical rulers are in units of centimetres, and the arrow at the top left corner indicates the expected direction of printing during production.

Figure 3 Order Carton Label Design

Printing the barcode in the indicated direction (i.e. ‘picket fence’) is faster and more accurate with less dependency on the accuracy of the stepper motor used to advance the label stock during production.

The optional bearer bar makes it easy to spot missing pixels during the production process, but has no impact on the operational use of the label.

The above design can be reproduced by sending the following ZPL script to a barcode label a printer having a print density of 300 dots per inch (dpi).

```
^XA
^LRN
^BY8^FO96,12^BCN,354,N,N,N^FD>;81234567^FS
^A0N,90,120^FO183,378^FD81234567^FS
^FO12,456^GB802,4,4,B,0^FS
^PQ1,0,1,Y
^XZ
```

3.3 Field Data

The barcode(s) printed on the label has the properties given below.

Table 8 Order Carton Label Barcode Definitions

Property	Barcode Value
Bar Colour	Black
Bar Height	30 mm
Data Content	8 digit ULID
Data Source	Dynamic definition by WCS
Orientation	Picket Fence
Placement	<as per Figure 3>
Quiet Zone	≥ 8 mm
Symbology	Code 128 Subset C
X-Value	0.677 mm

The 8 digit ULID is qualified as follows:

- A prefix digit of ‘8’
- A unique 7 digit value in the range of ‘0000000’ .. ‘9999999’
- The Warehouse Control System is to ensure that the 7 digit values are unique across all Order Cartons that are currently active within the facility.

The human-readable text printed on the label has the properties given below.

Table 9 Order Carton Label Human-Readable Text

Property	Value
Content	8 digit
Font	Arial / Triumvirate (or equivalent)
Orientation	<as shown in Figure 3>

Table 9 Order Carton Label Human-Readable Text

Property	Value
Position	<as shown in Figure 3>
Size	<as shown in Figure 3>

3.4 Label Production

Each label should be produced in accordance with the properties listed below.

Table 10 Order Carton Label Production

Property	Value
Bar Reflectance	≤ 15%
Barcode Quality	≥ ANSI Grade B
Symbol Contrast (PCS.)	≥ 55%
Technology ①	Direct Thermal or Thermal Transfer
Text Colour	Black
Thermal Transfer Ink ①	Wax or Wax-Resin or Resin

① Dematic preference is for the Thermal Transfer of Wax-Resin.

Toll is responsible for the provision of LPA consumables (i.e. label stock and Thermal Transfer ribbon) that comply with these requirements.

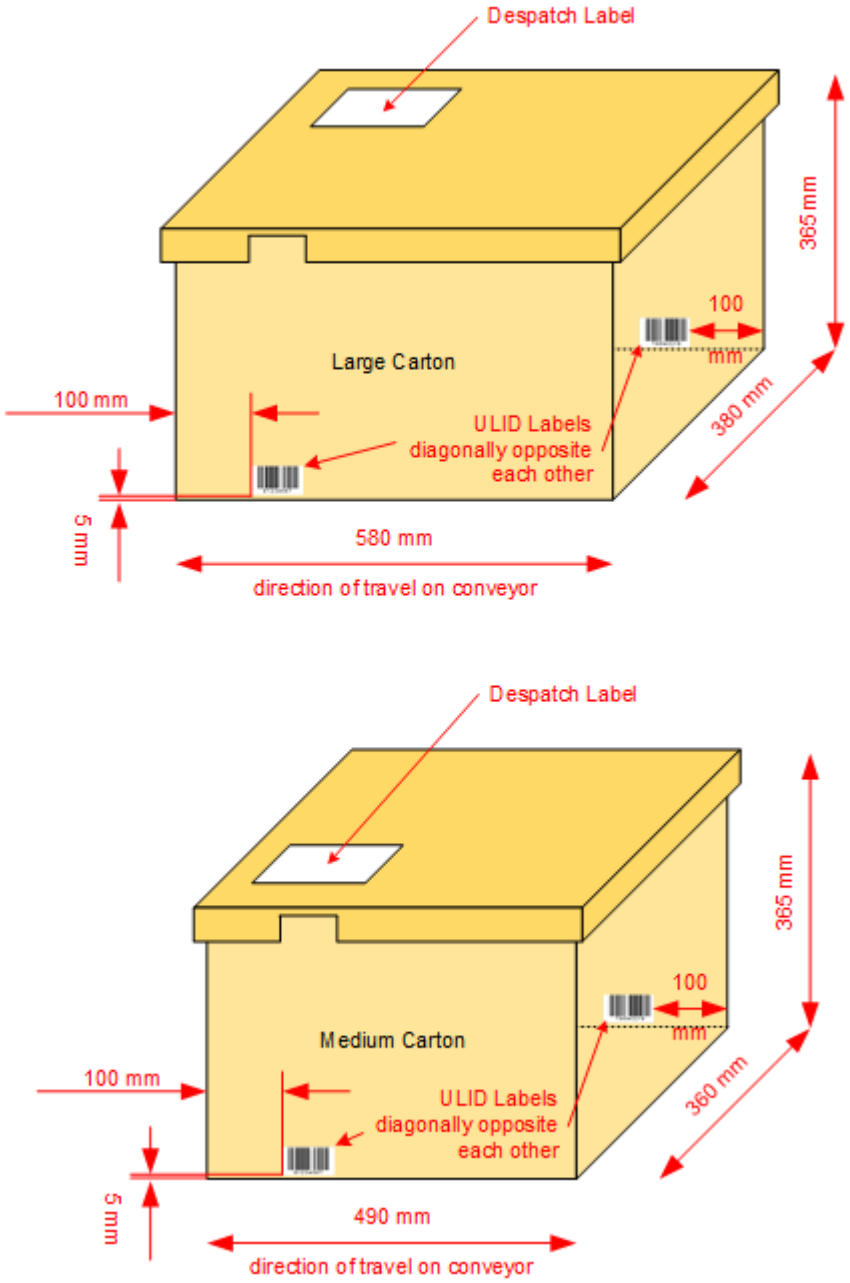
3.5 Label Placement

An integral component of the carton erection process is that each Order Carton Label is automatically affixed to each side of an Order Carton. Each label is to be affixed without wrinkle and in such a manner that the label is presented to as shown below in Figure 4.

The placement of each label is to have a tolerance of ±3 mm, where the top / bottom edge of each label is to be parallel to the top / bottom of the Unit Load.

NOTE: The nominated position will maximize the protection of the label when the Order Carton is moving adjacent to conveyor guard rails, etc.

Figure 4 Order Carton Label Placement



Refer to drawing P06418L003 (i.e. reference document 2) for more details.

The Despatch Labels referenced above is one of the Despatch Labels specified in Section 5.