1. Purpose

The purpose of this document is to outline the specifications for the DHL Freight Labels.
Legend:

Parts that are valid solely for Customer Automation Systems are marked with a CAS symbol.

Cross-references are marked with this symbol. They are provided to indicate related chapters or to refer to associated information.

Product-specific information is marked with this symbol

Important remarks are marked with a red exclamation mark.

2. Material Specifications

DHL labels must meet the following paper specifications

Paper
Color: Premium white
Weigh: min. 80 g/m²
Thickness: 90 to 1400 µm

Adhesive: Permanent adhesive

Thermal sensitivity (paper, ribbon)
Image density: 1.30 to 1.40 (Macbeth)
min. activation temperature: 70 C

Resistance:
Resistance to: abrasion
water
Does not degrade when exposed to direct sun
Long life (>2 years) if stored in normal conditions

3. Specifications of Segments

The numbered sections of the DHL Transport Label as shown below refer to the following paragraphs where the sections are described in more detail. The dimensions of the sections are described in the technical specification.

The label consists of **sections**, which may further contain one or more **segments**

As a general principle, any insecure or unreliable label content information should not be printed on the label. It is better to omit information if it may be wrong.

This chapter defines which content of the sections and segments are **mandatory, conditional** or **optional.**

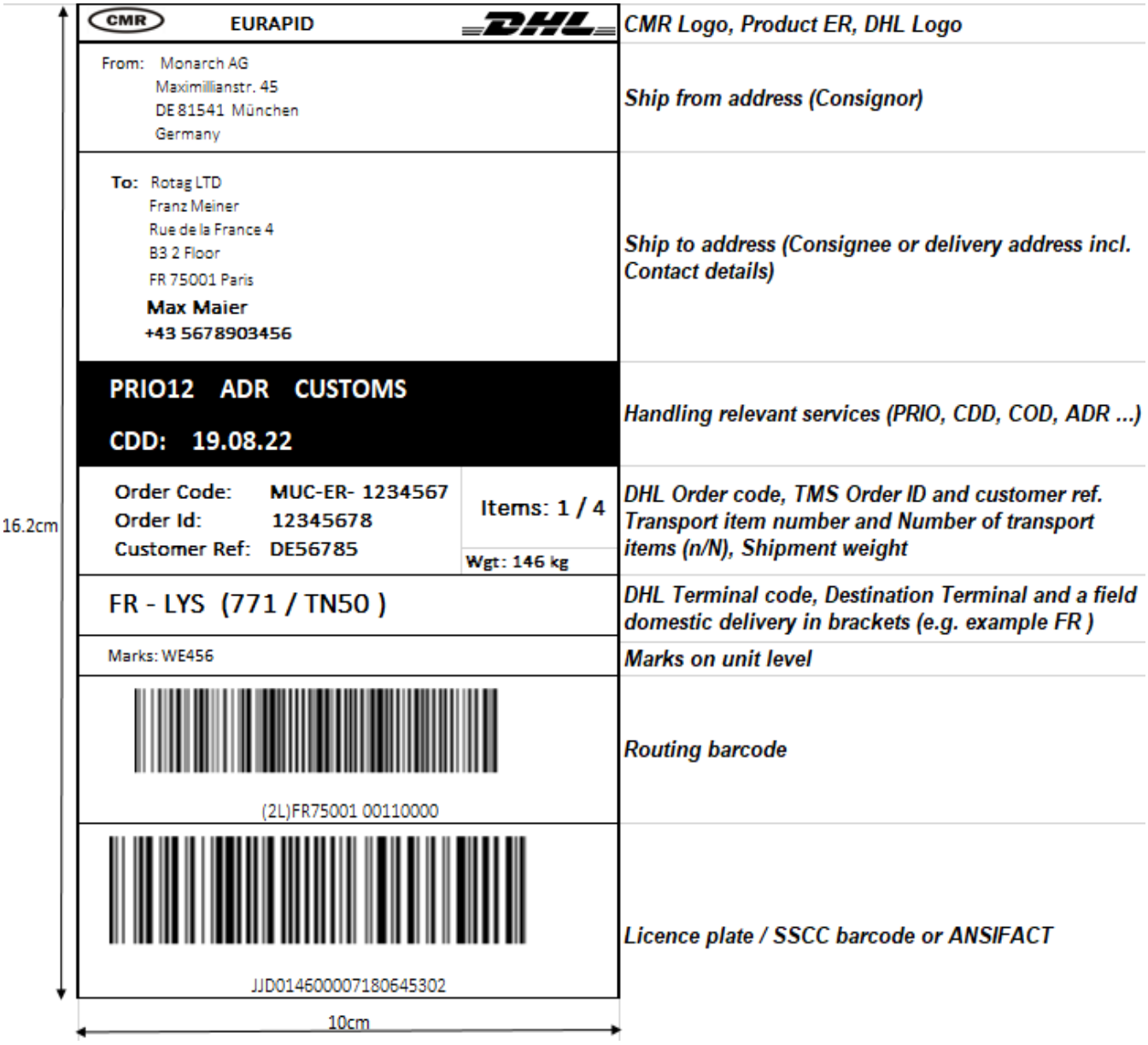
- **Mandatory**: means it must always appear independent of the situation. If mandatory information is not available, the whole label or a particular label section/segment should not be printed. (E.g.: no DHL Transport Label must be printed without License Plate barcode)
- **Conditional**: means it may be mandatory in some cases and optional in other cases. (e.g. depending on product or country of origin)
- **Optional**: means that the label field content is not mandatory, it does not have to be displayed on the label. (E.g.: the customer logo)

Note: For the routing information, the optional content information does not always indicate that the dedicated section or segment field remains empty/blank when printing the label.

For instance, if the optional delivery date or time features are not chosen, optional implies that zeroes are displayed in the routing barcode.

4. Layout overview / Transport Label

Label Example (incl. new Handling relevant services)



The complete label length should be used.

CMR Logo, Product and DHL business unit

4.1.1 CMR LOGO

Road freight between most European and Middle East countries bases on the CMR conventions (Convention des Marchandises Routiers). The CMR logo shows that the underlying conventions apply.

DHL made this logo mandatory for all international road-based shipments between CMR member states, as the CMR not only regulates the rights of the customer (with whom the carrier has a contract), but also the shipper and the receiver, with whom the carrier does not necessarily have a contract.

4.1.2 Product Name (mandatory)

The product name officially specifies the product under which the underlying transport service has been sold (e.g. EUROCONNECT).

Following products are possible:

DOMESTIC EUROLINE

DOMESTIC EUROCONNECT

EUROCONNECT

EURAPID

EUROLINE

COLDCHAIN

DHL TRADE FAIRS & EVENTS

PREMIUM PALLET DOM

STANDARD PALLET DOM

4.1.3 DHL Logo (mandatory)

This section contains the carrier logo and is placed in the upper right corner of the label.

4.2 Ship from address (mandatory) and customer logo

From Customer & Company
Heinrich-von-Stephan-Ring 23
53113 Bonn
GERMANY

4.2.1 Address (mandatory)

The “ship from” section refers to the address of the shipper, for identification by the carrier as well as the receiver. It does not necessarily reflect the return address in case of failed delivery.

If approved by DHL, a deviating address may be printed here.

The word “From” is to be printed in the upper left corner of this section.

The data elements are based upon the Corporate Data Model (CDM) and shall be structured as follows (the table shows the date elements for the “From” address):

Lines	Structure	Data Elements
1	**Name of the shipper / company name**	Name or Company
2 & 3	**Street & house number**, house number extension, relevant address details like floor, room etc	building name
		department
		street name
		street number
		Floor
4a	**Zip code**, town (according to local standards – see above, maybe prefixed by ISO 3166 two-character country code)	Zip code
		City name
		District
4b	**County or State** according to local standards (maybe left blank or added to zip code line)	Country division code
		Province
5	**Country name** (optional for domestic shipments, mandatory for cross-border shipments if ISO 3166 code is missing)	Country code
		Country name

Further information such as floor number, county etc is possible but the overall number of lines must not exceed 5, for consistency with DHL's data structure.

For domestic pieces the country name may be printed in local language. For all cross-border pieces the country name has to be printed in English (may be followed by local translation).

The position of the zip code should be consistent with the standard layout for postal addresses in the country of the ship from address. Typically, it will be one of the following three possibilities:

1	**preceding the town name** (e.g. France, Germany)
2	**on a separate line at the end of the address block** (e.g. UK, Hungary)
3	**Non-existent (e.g. Ireland)**

For international shipments, the country name should be written in its own line. If there is not enough space within the maximum length of the label, the full country name may be added to the line containing the town name.

The word "From" may be written in a local language, however for international shipments the English word "From" must appear as well. In this case only English, or both languages (English and local language) may be used, separated by a "/".

The maximum number of lines is restricted by DHL's internal data flow and the maximum height of the block. Each line contains a maximum of 35 characters.

4.2.2 Customer Logo

Customer Logo can be printed from Customer if he print his own labels near the address (right side of the address).

4.3 Ship to address (mandatory)

To ReveiveCalls, Inc.
Mrs Smith
Poststreet 4
FR-69000 Lyon
France
Max Maier
+43 5678903456

Each piece requires a Ship to address. If the piece already has a label with the "ship to" address that is compliant with the specifications mentioned above, the sentence "please refer to separate address label on piece" can be printed here.

The word "**To**" may be written in local language, however for export shipments the English word "To" must appear as well. Alternatively, both languages (English and domestic) may be used, separated with a "/".

For the structure of the ship to address, see section **4.2.1 Ship from address**

Further information such as floor number, county etc is possible but the overall number of lines must not exceed 7, for consistency with DHL's data structure.

Delivery country, town and zip code have to be printed in bigger font. In case of lack of space, the two lines can be joined to one line.

Contact name and telephone number can be printed as last part (see above).

4.4 Product features

4.4.1 Handling-relevant Services

Product features encompass handling (printed left aligned) and date/time delivery (printed right aligned) features, which are shown on the label to support DHL internal operational procedures.

COD

Only product features that impact the delivery- or the sorting process are shown on the label.

Typical product features are

- “COD” Cash on delivery for declarable shipments.
- “DAD” Delivery against documents
- “PRIO” used for product EURAPID
- “PRIO10” used for EURAPID (for areas where delivery before 10:00 is defined)
- “PRIO12” used for EURAPID (for areas where delivery before 12:00 is defined)
- “AFTER12” (delivery after 12:00 is defined)
- “ADR” (Dangerous goods shipment)
- “CUSTOMS” (Shipment with customs)
- “TIME SLOT / TIME WINDOW” (Date and time in the Time slot booking fields)

4.4.2 Delivery date Services (CDD and FDD)

For EURAPID shipments will be printed PRIO or PRIO12 (for shipments where delivery before 12:00 was requested) and the COMMITTED DELIVERY DATE (CDD) calculated from Lead Time Calculator (LTC).

PRIO12 CDD: 19.08.22

For EUROCONNECT shipments will be printed the FIXED DELIVERY DATE (FDD) if entered in the system (not mandatory).

FDD: 19.07.22

4.5 Standard Shipment information

Order Code: MUC-EC-1234567 Order ID: 00001234567 Customer Ref: 123456789	Items: **3/9** **Wgt:12 kg**

The shipment section contains the following information.

4.5.1 Order Code (mandatory or Customer Reference)

The DHL order code is the unique identification code for shipments. The order code can be defined for a specific customer by DHL Freight.

4.5.2 TMS Order ID

The TMS order ID is the unique identification number for shipments in some DHL TMS. This additional number will be printed on labels.

4.5.3 Customer Reference (mandatory or order code)

The customer (sender) may refer to own package(s) using different identifiers. Those may be printed to the label, ideally in cases where DHL has received those references with the transport order. All formats supported by the EDI solution agreed with DHL can be printed to the label as well.

4.5.4 Relative number and total number of pieces in shipment (mandatory)

A piece counter is separated with a slash « / » from the total number of pieces. Example "1/23", "2/23" …

This entry is mandatory, as it reduces the risk of delays in customs processing.

Any single-piece product has to carry the string "1/1".

4.5.5 Shipment weight

The total weight of the shipment should be printed.

Any customer automation application has to ensure that at least the last package of a shipment contains the shipment weight. Wherever the shipment weight is known prior to printing the first label, it must be printed on all labels.

Customs recommends that for easier customs processing the full shipment weight is printed on each package. This should be done where this information is available when printing the label.

4.6 Country code, Destination terminal, Domestic delivery information in brackets

DE – CGN (050 | 0501)

4.6.1 Country code and Destination Terminal (mandatory)

For identification of the shipment routing following information will be needed: The country ISO code (2 digit) and the 3 Letter destination code will be always mandatory.

4.6.2 Domestic routing information (mandatory for CZ / DE / FR / IT / SK)

For shipment to Germany, France, Italy, Czech Republic and Slovakia additional domestic routing information will be needed.

2 additional information will be needed in brackets. Terminal code (3 digits) and Delivery tour (4 digits)

4.6.3 Domestic routing file (CZ / DE / FR / IT / SK)

The domestic routing file has following structure:

Field name: record type, char (3), mandatory, NEW = create new entry, AND set valid till date (as valid from date - 1 day of new record) of existing entry if corresponding record is found, DEL = set valid till date of existing entry if corresponding record is found

Field name: product group, char (5), mandatory, must fit to the available product groups of locality register

Field name: sending country, char (2), mandatory, 2 letter country code (e.g. DE)

Field name: postcode from, char (9), mandatory, country postcode (e.g. 12345)

Field name: postcode to, char (9), use postcode from if empty

Field name: valid from, date, mandatory

Field name: valid till, date

Field name: domestic terminal, char (3), mandatory (e.g. BER or 123)

Field name: tour number, char (4)

Field name: weight range from KG, char (9,3)

Field name: weight range to KG, char (9,3)

Current file attached (valid from: 8th June 2015, dpi-201506-HO-week-23.csv)

4.7 Marks & numbers

Marks: 88RSGHO433L00

4.7.1 Marks

The information in this field will be on piece level. If we have one shipment with 2 pieces, we can have individual information for every piece.

4.8 Routing Barcode Segment

The DHL ISO Routing Barcode contains destination country, destination zip code, transport products and associated product features.

If the printout of a correct routing barcode cannot be guaranteed by a customer automation system, the routing barcode must be omitted. This will indicate to DHL that a Routing Label or Network Label has to be created by DHL.

Where a field of the routing barcode is mandatory, its content is required as part of the routing barcode.

A **conditional** field of the routing barcode implies that the content is mandatory in some cases (e.g. for a specific product) and optional in other cases.

When a routing filed is **optional**, the content is not required.

In the context of the routing barcode, **optional** does not always imply that the routing field may remain empty. Some routing fields must always be populated at least with zeroes. If data is available, though, such a field should always be filled.

The **zip code, the region specific fields** and the **separator** after the product/feature block are the only **optional** fields which must **be omitted** if the data is not available.

4.8.1 Routing Barcode structure

The following two international ISO standards are supported when coding routing information in barcodes.

- The **ASC MH 10** routing barcode starts with the ASC MH 10 Data Identifier "**2L**" and is coded in barcode symbology Code 128.
- The **GS1** routing barcode starts with the GS1 Application Identifier "**403**" and is coded in barcode symbology GS1-128.

Both standards are complementary and can co-exist without restriction (they do not differ in content but only in their technical structure). However, ***DHL Freight-internal applications will only produce ASC MH 10 routing barcodes starting with 2L.***

As mentioned above, a distinction has to be made between the information which will be captured and the information, which will actually be printed out on the barcode. This distinction is mainly relevant for applications which need an indication on the output side.

Example: At **data content** level, a calendar date for delivery is not chosen for the selected product, so the delivery date information will not be captured. The delivery date is optional, as it does not always have to be captured.

However, at **barcode** level, the delivery date digits are mandatory for the following reason: even if the data is not captured, the delivery date field may not remain empty/blank, the field must be populated by *zeroes.*

All routing information appears both in human and bar-coded format except for the parenthesis around the Data Identifier which only appear in human readable format – not in the barcode.

The printout level is either **mandatory** or **optional,** it means ***the whole barcode*** is either printed or not printed (with the possible exception of a country-specific extension).

A product/feature block always consists of 8 digits, regardless of which products and features have been chosen.

The table below details out **ASC MH** and **GS1** barcode routing structures

SECTION	ASC MH 10	GS 1	String
LEFT PARENTHESIS	(		Mandatory ***(only in plain text – not in barcode!)***
DATA / APPLICATION IDENTIFIER	"**2L**"	"**403**"	Mandatory
RIGHT PARENTHESIS	)		Mandatory ***(only in plain text – not in barcode!)***
ISO COUNTRY CODE	**2 digits alphanumeric**	**3 digits numeric**	Mandatory For domestic shipments as well
ZIP CODE	Zip code of receiver address. **Variable length, max. 12 characters**; The zip code may never contain spaces or symbols **Remains empty in case of country with no zip code system.** In case of known DHL area code (3 chars) or a DHL delivery facility code (6 chars), this can be coded here, separated from the country code by a colon ":".		**Conditional** (Mandatory where existent)
FIELD SEPARATOR	" " character		Mandatory
PRODUCT CODE	**2 numeric digits (fixed length)**		Mandatory
DELIVERY DATE	**2 numeric digits (fixed length)**		Mandatory If no date specified, put two zeroes.
DELIVERY TIME	**1 numeric digit (fixed length)**		Mandatory (if no delivery time, put one zero)
HANDLING FEATURE CODE(S)	**3 digit numeric number with leading zeroes (fixed length)** Sum of values of product features		Mandatory (if no feature, put three zeroes)
FIELD SEPARATOR	**FNC1** (Special Code 128 symbol, in all three code sets.)	**"+"** character	Optional May remain empty
COUNTRY-SPECIFIC CODES	Variable up to 6 numeric characters or up to 2 alphabetic characters, **for domestic use only**.		Optional May remain empty

Example of a routing code: **2LBE3500 11000002123456**

(2L)	BE	3500	" "	11	00	0	002	123456
Data Identifier	ISO Country Code	Zip code	Field separator	Product code	Delivery Date	Delivery Time	Product Feature	Region specific codes

4.8.2 Destination country code & zip code

The Data/Application Identifier is followed by the destination country code and zip code.

4.8.2.1 Country Code (mandatory)

Destination country is coded using ISO 3166 standard routing barcodes:

ASC MH 10	**Two** digit alphabetical routing codes
GS1	**Three** digit numeric routing codes.

4.8.2.2 Zip code (mandatory where existent)

Any *blanks*, *dashes* or *other symbols* have to be removed from the zip code, before it is coded in the routing barcode. No further adjustment is necessary.

Given the zip code length vary from country to country and may also vary within the same country, this part of the routing barcode has to be terminated by a "+" (plus) sign.

The zip code part may only be omitted from the routing barcode for destinations without zip codes. In these cases, the DHL Service Area Code and Facility code (preceded by a colon, "**:**") should be used as a replacement where it is known

Zip code table excerpt:

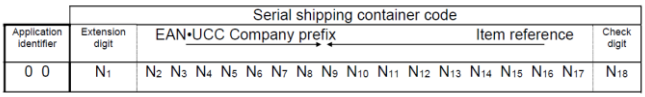
Country	Structure	Conversion
NL	9999 AA	9999AA
PL	99-999	99999
GB	AAA 9AA	AAA9AA
SE	999 99	99999

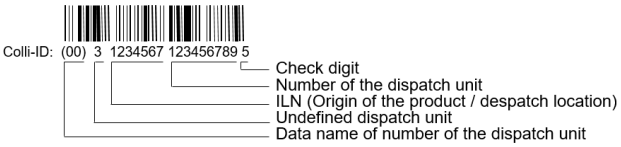
(Note: "9" represents a number; "A" represents capital letter.

4.9 License Plate Segment (mandatory)

4.9.1 SSCC (GS1)

The corporate possibility which is used in most European network countries is the SSCC (GS1-128 (UCC/EAN-128)) license plate code. Which have following architecture:





> **Data name of number of the dispatch unit 00:**
numeric 2 / Indicate that the field contains an SSCC (Always 00)

> **Undefined dispatch unit:**
numeric 1 / Used to increase the capacity of SSCC (Always 3)

>**ILN (dispatch location):**
numeric 7 / EAN / Prefix to include the country code and the company number. It is a worldwide identifier.

For DHL Freight + Logistics:
Examples:
84(Spain)+24948(DHL Freight+Logs)= 8424948
56(Portugal)+02094(DHL…)= 5602094

> **Number of the dispatch unit:**
numeric 9 / Sequential number assigned by the company.

First number is shared between Logistics and Freight: (at least in DHL ES)

DHL Logistics: From 0 to 4 --- Total: 8424948000000000 to 8424948499999999
DHL Freight: From 5 to 9 ---- Total: 8424948500000000 to 8424948999999999

>**Check digit:** numeric 1 / Control digit

EAN (European Article Number) check digits (administered by GS1) are calculated
by summing the odd position numbers and multiplying by 3 and then by adding the
sum of the even position numbers. The final digit of the result is subtracted from 10
to calculate the check digit (or left as is if already zero).
A GS1 check digit calculator

and detailed documentation is online at GS1's website. Another official calculator page shows that the mechanism for GTIN-13 is the same for Global Location Number/GLN.

Customers printing labels being produced by any DHL Freight system or built by themselves, must be allocated by the local DHL organization with a range of numbers for the license plate within the general range mentioned above, to be always under control and to avoid overlapping's.

Please find below the link to the GS1 organization and the check digit calculator.

http://www.gs1.org/barcodes/support/check_digit_calculator

Positions	N_1	N_2	N_3	N_4	N_5	N_6	N_7	N_8	N_9	N_{10}	N_{11}	N_{12}	N_{13}	N_{14}	N_{15}	N_{16}	N_{17}	N_{18}
Number ***without*** Check Digit	3	8	4	2	4	9	4	8	5	0	1	8	1	3	8	7	3	-
Step 1: Multiply	x	x	x	x	x	x	x	x	x	x	x	x	x	**x**	x	x	x	-
by	3	1	3	1	3	1	3	1	3	1	3	1	3	**1**	3	1	3	-
Step 2: Add results	=	=	=	=	=	=	=	=	=	=	=	=	=	**=**	=	=	=	=
to create ***sum***	9	8	12	2	12	9	12	8	15	0	3	8	3	**3**	24	7	9	=144
	Step 3: Subtract the sum from nearest equal or higher multiple of ten = 150- 144 = 6 (Check Digit)																	
Number ***with*** Check Digit	3	8	4	2	4	9	4	8	5	0	1	8	1	**3**	8	7	3	**6**

4.9.2 Barcode Content (ANSIFACT)

Each piece of each shipment shipped with DHL requires a License Plate as its unique identifier.

The License Plate must not contain more than **35 characters** (excluding the data identifier e.g. J).

The License Plate may only contain numeric and upper case alphabetic characters drawn from ISO/IEC 646 – they must not include any lower case character or punctuation mark.

The License Plate must start with a string of characters representing an issuing agency assigned by ISO.

DHL issued License Plates LPs usually begin with "JD00" or "JD01".

In EVO will be used "JD01" and the lengths will be 20 characters (excluding the data identifier e.g. J).

Example: (J) JD01 4600007180009616

4.9.3 Barcode and plain text

A License Plate must be printed as a barcode. Its content must be repeated in plain text below the barcode.

CAS

Although, according to the official standard, both Code 128 and Code 39 are allowed to encode License Plate numbers, any barcode produced by a CAS system or any DHL internal software has to use Code 128

4.9.4 Data/Application Identifier

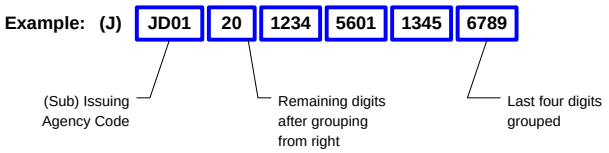
The Data Identifier (for ASC MH 10 data fields) or Application Identifier (for GS1 data fields) is an ISO-specified string of characters that identifies the content of the data that follows.

All DHL issued License Plates will be of type ASC MH10, using Data Identifier "J".

For readability reasons of ASC MH10 License Plates it is strongly recommended to group a code following the (Sub-) Issuing Agency Code by blocks of four digits, in a way that the last four digits form a group.

CAS..

This way of printing License Plate in groups of four digits is mandatory for all DHL-owned customer automation software



The Data Identifier preceding the License Plate is NOT part of the License Plate. It does not have to be considered when determining the License Plate length. Two License Plates are identical if their only difference is a deviating data identifier (e.g. "J" versus "2J").

However, the Data Identifier always has to be printed on the label both in human readable and bar-coded format. The barcode must not include the parentheses which are used for clarity only.

(The bar-coded form of the data identifier and license plate is then “JJD01…….”. & the human readable form should be in the form “(J)JD01 …..”.) Label Types, Fonts and Sizes

5. Label Types, Fonts and Sizes

This paragraph describes all defined types of DHL Labels, each of them with mandatory and optional sections including size and position on the label.

The values for font sizes specify ***minimum font sizes***. However, the maximum height per block has to be considered. Furthermore, the font size for the receiver address must be bigger than the font size for the shipper address. For each address, the zip code and town font size must not be smaller than the size of the biggest font used in the respective address.

For all font sizes, the values given for “Font height in mm” and “Size in dots at 200 dpi” are rounded values, provided solely for ease of programming. The size always includes the space between the lines.

Although **ARIAL** font is recommended, other fonts can be accepted if they are without serifs and if they provide an equally good legibility.

In the segment descriptions, thin red lines are used to separate segments. **These lines must not be printed**. A thick red line shows where a black line needs to be printed as a segment separator on the label.

5.1 DHL Label

5.1.1 Size and Orientation

The label width must be **within 95 and 110 mm**. This requirement is met by both A6 labels (portrait) and 4” wide labels.

The preferred length of a DHL Transport Label is between **148 mm (A6 length) and 162.4 mm**, but it can be longer if necessary. A general maximum length is not defined. However, each customer must be given the possibility to print labels that are not longer than 250 mm. Depending on the piece dimensions, no label may be too long to fit on one side of the package.

As an exception, the label can be divided in two smaller sized labels. In this case the label that does not contain the License Plate barcode form must show the unique piece identifier at least in human readable form (minimal font size 8 point).

6. Barcode Specifications

6.1 General

The customer can apply more barcodes to the piece, linear as well as 2-dimensional, for his own purposes. However, care must be taken that these other barcodes do not interfere with DHL internal processes.

For this reason, the following restrictions apply to other barcodes on the piece:

6.2 Linear barcode symbology

DHL uses Code 128 as standard barcode symbology for License Plate and Routing Barcode. For bar-coded information defined under GS1-standards (such as the GS1 SSCC) the GS1-128 barcode symbology has to be used.

For best-possible read-rates of automated scanning, the barcodes on a label should not have the same distance to the left or right edge. This is usually achieved by printing the barcodes centered on the label. Where that is not possible, it is recommended to manually indent the License Plate barcode by at least 2 millimeters.

In accordance with License Plate standards, DHL will also accept Code 39 for ASC MH10 coded information. This barcode symbology however is not the preferred barcode symbology.

Code 39 must not be used on any labels produced by DHL or printed on systems created by DHL.

When Code 39 is used, special care has to be taken that the barcodes do not exceed the maximum length requirements, due to the low information density of this barcode.

The requirements are imposed on the one-dimensional barcodes on the DHL Transport Label. The use of the minimum values of the specifications is recommended.

6.2.1 Code 128 Barcodes

All **BAR CODE PARAMETERS** must be as defined in ISO/IEC 16388 “Automatic identification and data capture techniques -- Code 128 bar code symbology specification”

Code 128 bar codes on piece labels and archive labels must meet the following specifications.

Symbol height	The minimum height for the barcode is 25 mm. However, a barcode height of at least 28 millimeters is recommended
x-dimension	The minimum narrow element dimension (x-dimension) shall not be less than **0.33 mm**. The x-dimension shall not exceed **0.51 mm**. Within this range, the biggest x-dimension has to be used that is supported by the printing device used, while complying with barcode length and quiet zone specifications.
Quiet zone	Linear barcode symbols must be printed with leading and trailing **quiet zones. For Code 128, DHL demands not less than 5 mm**. Quiet zones are not part of the barcode itself, i.e. a barcode of 91 mm needs at least 101 mm space on the label.
Quality	The linear barcode quality must, as a minimum, conform to **“Grade B”,** tested according to EN 1635, Test Specifications for Bar Code Symbols.