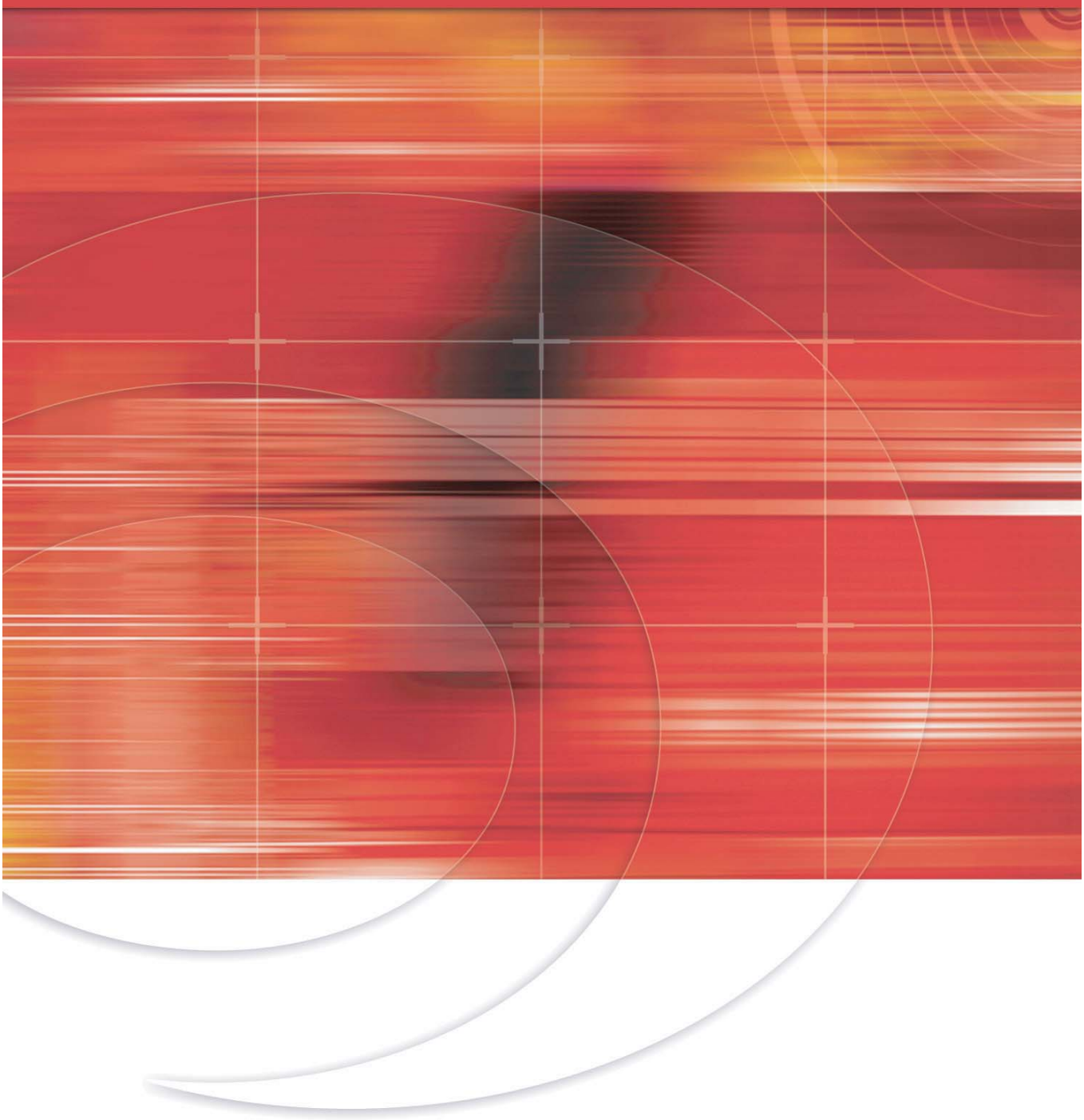
TECHNICAL DATASHEET



Paper cards
Technical specifications

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Introduction

The goal of this document is to specify the characteristics and features of the card paper to be used with the Evolis Tattoo printers.

Card/ticket specifications

2.1. Scope

All stated characteristics are applicable for a temperature of 23°C (73° F) and relative humidity of 50%.
Note that the ISO specifications are of 23°C (73° F) +3°C (38° F) with 40 to 60% humidity.

2.2. Card Mechanical characteristics

Format ISO 7810: 85.6 x 53.98 mm (3.37” x 2.125”)

Shaping: rounded corners. Radius of 2.88 to 3.48 mm (114 to 137 mil)

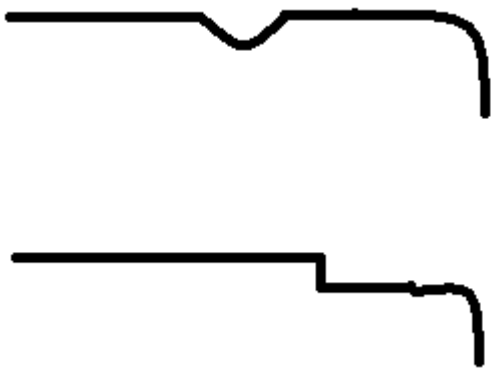
Version 1

Length	85.6 ± 0.12 mm (3.37" ± 4.7 mil)
Width	53.98 ± 0.06 mm (2.125” ± 2 mil)
Deviation of Edges	± 0.05 mm (± 2 mil)
Thickness	(300 ± 30) µm to (600 ± 30) µm

Version 3

Length	85.6 +1.0/-0.3 mm (3.37" + 39/-11.8 mil)
Width	53.98 ± 0.2 mm (2.125” ± 7.9 mil)
Deviation of Edges	± 0.05 mm (± 2 mil)
Thickness	(415 ± 165) µm

To avoid synchronization issues with cards in the printer, the following card profiles must not be used (upper edge of the card, maximum height of 1 mm/39.3 mil).



Local thickness
We accept local extra thickness of +10% maximum compared to the average thickness of the card (card with antenna).

Flatness ≤ 1mm
Maximum perpendicular distance between the point on the concave part and the surface defined from the three corners of the card.

Twist ≤ 0.5 mm
Maximum perpendicular distance between a corner of the card and the surface defined from the three other corners of the card.

Rectilinear ≤ 0.5 mm
Maximum perpendicular distance from a point located on an edge of the card and a straight line drawn between the adjacent corners.

2.3. Features to avoid

The following characteristics should be avoided to improve the print quality.

- Splice or visible joint.
- Dusty card.
- Fragments of cut cards.
- Fold on the surface of the card.
- Tear.
- Uneven surface.

2.4. Packing and storage conditions

Packing needs to be free from pollution or residual dust from cutting the cards.
We recommend packing cards **in a plastic film** in batches of 100.

To avoid any corruption during storage and to reduce the impact of humidity variation, we recommend the following:

- Keep cards in their package until they are actually used.
- Store the card package as per the Top/Bottom indication on it.

Evolis recommends storage of cards at an average temperature of 20°C (68 °F) with maximum relative humidity of 50%. Whenever possible, cards should be stored in a dark place protected from light. Damp and hot storage conditions must be avoided.

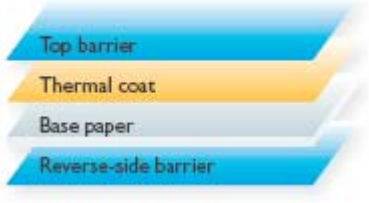
Recommended storage conditions: 35°C (95 °F) and 85 % relative humidity maximum.

2.5. Printing

The coating on the print surface should be compatible with thermal transfer or direct thermal technology. The printing quality on a special coating should be approved by Evolis first.

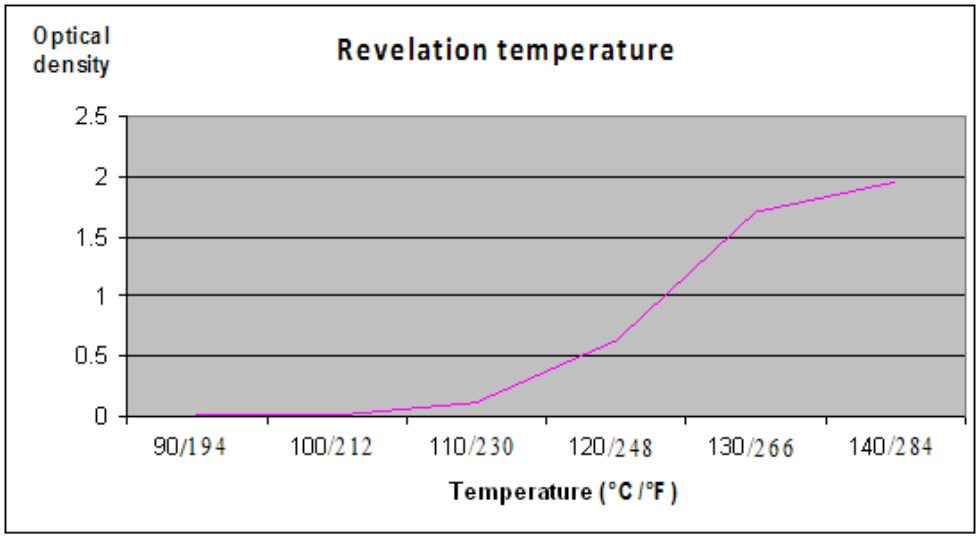
2.6. Revelation temperature

Tests carried out on top-coated paper ticket.



Protection paper on the front and the back.
Good protection against moisture and chemicals.
Good resilience to scratches.

Card thickness 340 µm +/- 30.



The average operating temperature of the thermal head for direct thermal printing is 135 °C (275 °F) at a speed of 24 mm/s (0.95”/second), with an ambient temperature of 25 °C (77°F).

These temperatures vary by ± 20%, from 108°C (226°F) for minimum printing contrast to 162°C (324 °F) for maximum printing contrast.

2.7. Printing speed

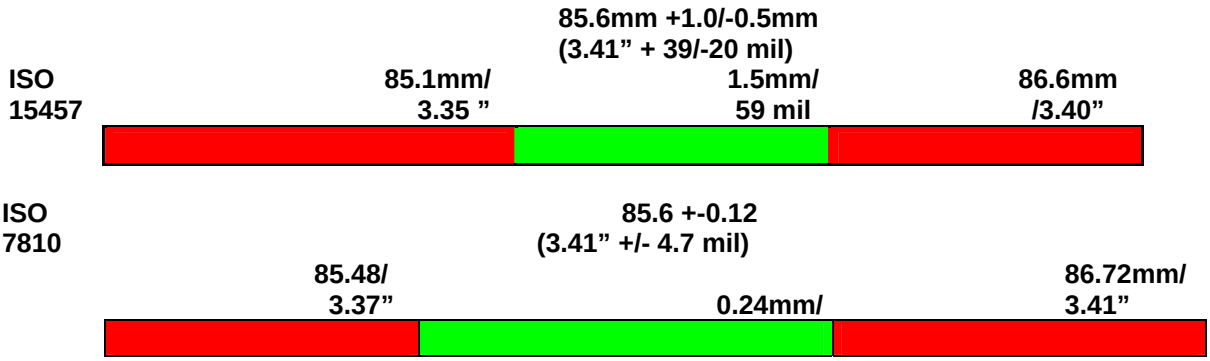
20 mm/s (0.79”/s) < Card speed during printing < 40 mm/s (1.58”/s)

The energy applied to the print head is automatically regulated according to the card transport speed.
The density is constant irrespective of the printing speed.

APPENDIX 1

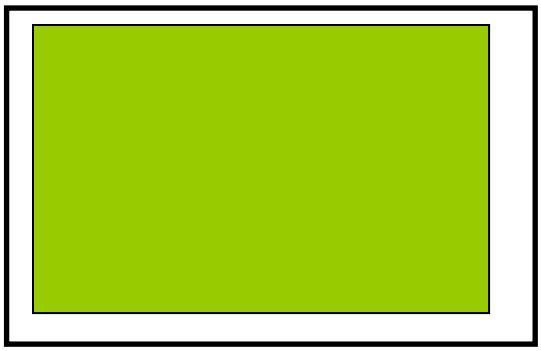
Benchmark of the ISO 7810 vs. the ISO 15457 standards

Width

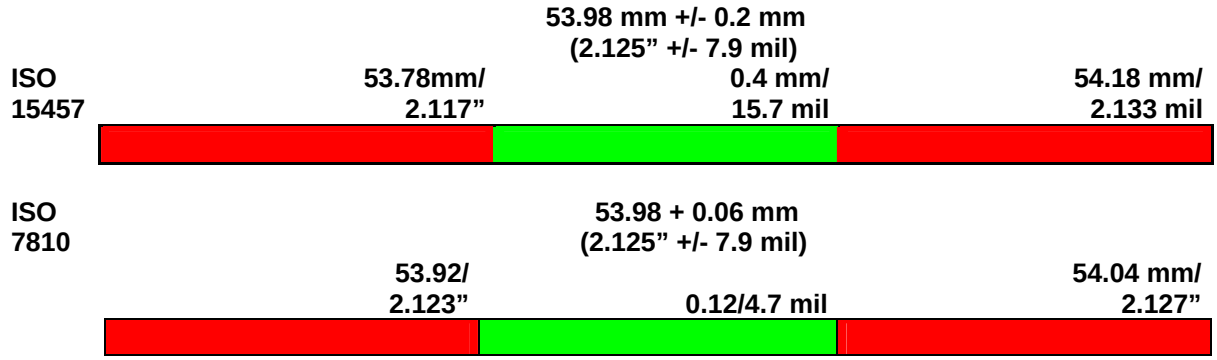


The printing offset is as stated by the ISO 7810 standard.
Printing will not be centered on the X-axis if the cards used are not compliant with specifications.

Example
Print area is shifted on a longer card.



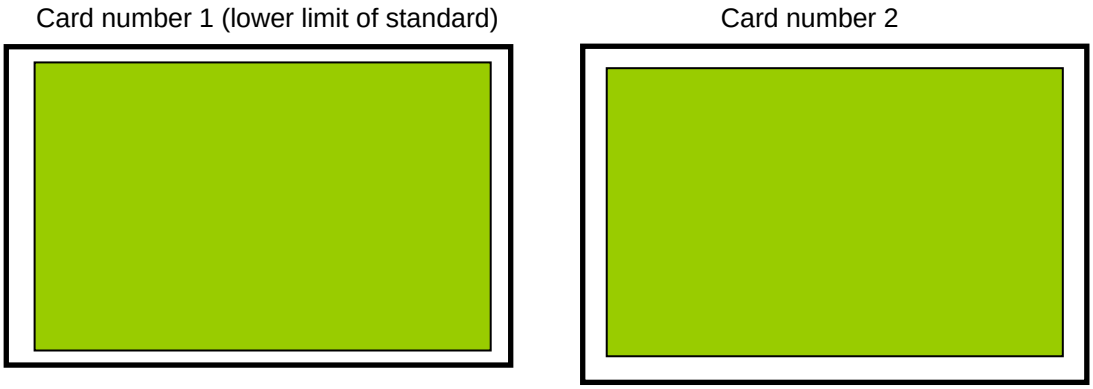
Height



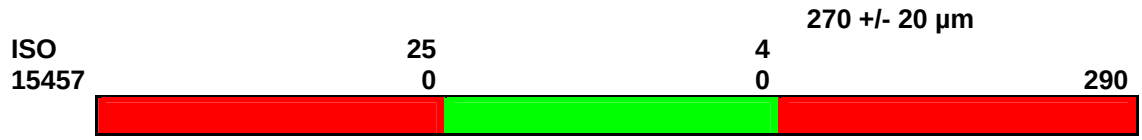
The printing offset is as per ISO 7810.
Printing cannot be centered on the Y-axis if the cards used are not compliant with specifications.

Example

Print area has shifted in those two cards printed one after another.



Thickness



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