



The innovative solution:

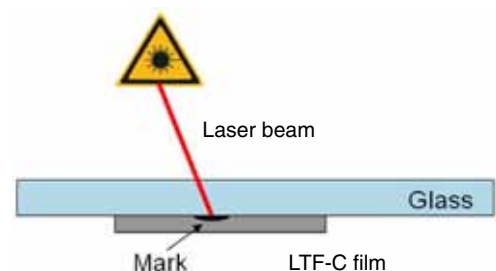
LTF-C for black marking on glass



Key advantages

- Individual marking
- Can be read by standard vision system
- High contrast
- Glass integrity not compromised
- Temperature resistant up to 1000°C
- Impervious to UV radiation
- Resistant against chemical products (acids, bases...)
- Permanent marking (durability more than 25 years)
- Protects against theft and illegal copying
- Prevents counterfeiting

LTF-C (Laser Transfer Film - Contrast) technology from Panasonic enables high-contrast marking not attainable by other systems. Using LTF-C film from tesa and a dedicated Panasonic Laser Marker, this patented technology is revolutionizing the field of glass marking.



Marking applications

Solar Industry



Each module goes through several manufacturing steps. To guarantee proper quality management, the manufacturing parameters of each solar module must be documented during the manufacturing process. LTF-C glass marking technology allows the glass substrate to be marked individually.

Advantages:

- Permanent & individual marking
- Can be read by 2D code reader and vision systems
- Can withstand all processing steps in the solar industry
- Impervious to UV radiation
- Short marking times of <1s possible

Automobile Industry



Automobile windows must be marked permanently and tamper-proof for each specific automobile. In contrast to traditional glass marking, LTF-C requires no caustic substances or subsequent thermal processing. LTF-C is a "cold", flexible laser marking technology.

Advantages:

- Reduction of product scrap via reliable laser technology compared to conventional screen printing
- More efficient stock management due to customer-specific marking applied after glass production
- Recording of individual markings or Vehicle Identification Number (VIN) possible part by part

Pharmaceutical Industry



LTF-C glass marking technology allows individual marking of primary packaging for track & trace purposes. The machine-legible Data Matrix code on each syringe means the pharmaceutical product can be tracked seamlessly throughout the process chain.

Advantages:

- 100% tracking of the primary packaging
- Product forgeries can be easily identified
- Excellent legibility
- Integrity of the glass body not compromised
- Permanent
- No particles

Diagnostic Industry



Medical products such as specimen slides must be able to be identified with 100% certainty! Mixups are not tolerated, and the stability of the glass body must not be compromised. LTF-C not only guarantees traceability, its potential extends to combating product fraud.

Advantages:

- Individual marking
- Low self-fluorescence
- Permanent
- Micro structuring / position marking
- Security features

You can find more information at: www.panasonic-electric-works.com

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