

IGT C1 Printability testers

Testers for offset inks



IGT Testing Systems supplies the C1 printability testers for offset inks. These testers are easy to operate and very successful all over the world. The C1 makes colour strips with offset inks with a known ink film thickness, which can be used for many purposes. It has especially been designed for use in colour measuring and colour matching systems. The C1 saves on costs (down time of the printing presses and waste of materials), because colour testing on the printing presses is no longer necessary.

APPLICATIONS

The C1 printability testers are used in the ink laboratories to produce colour strips in a very reproducible way. These strips are suitable to test many properties as e.g.

- Colour and transparency
- Ink transfer in g/m²
- Density, covering power, wear resistance, scratch resistance, flexibility, adhesion, gloss, light fastness, resistance to chemicals
- Set off, mottle, striking through, print quality
- Visual appraisal

The IGT C1 testers use in industries

- Offset printing ink
- Printing houses
- Paper and board
- Metal, plastics and packaging
- Resins, lacquers, varnishes and coatings
- Raw materials
- Cosmetics, electronics
- Tins and tubes (special type CTx3)

IGT C1 Printability testers

Modern design, simple to operate



IGT C1

The standard C1 is designed for a maximum printing width of 35 mm. The printing force can be adjusted between 100 and 1000 N. With this tester many printed strips can be made to test e.g. colour, density, chemical and other resistances, ink transfer (g/m^2).



IGT C1-5

The C1-5 has a maximum printing width of 50 mm. The adjustable printing force and the constant speed are the same as with the C1. Some tests require a 50 mm wide printed strip. In general, the performance of tests with 50 mm wide strips is equal to the 35 mm strips.



IGT CG1

This tester combines the C1-5 with a gravure printer. A print can be made with offset ink as on the C1-5 and after replacing the rubber printing disc by an anilox and mounting a doctor blade on it, the same print can be coated with a varnish or laquer. This way a print is created with 1/4 of the original printed colour and 3/4 over-varnished. On request the Gravure option can be made to fit on other C1 models.



IGT Cx3

With the Cx3 it is possible to print three strips, of 15 mm wide, besides each other with a distance of only 1 mm between. With this device a strip can be printed with the desired density or colour and two other strips, with e.g. the plus and minus tolerances, all on one sample. On this unit also prints can be made with a width of 35 mm.

IGT C1 Printability testers

Reliable and sturdy construction



IGT C1-7

The maximum printing width of the C1-7 is 70 mm. This device is especially designed to print directly on credit cards. The visual appraisal of strips of this width is more convenient.



IGT C1-V

The printing speed of this tester is adjustable in five steps between 0,2 and 1,0 m/s. The other properties of the instrument are the same as the C1-5. Depending on the test method, sometimes there can be an influence of the speed on the test results; with this tester the influence of the speed can be tested.



IGT CTx3

All C1 testers allow to print on cans with a diameter between 63 and 68 mm. The CTx3 is especially designed to print three strips of 15 mm, besides each other, directly on cans and tubes with a diameter between 16 and 68 mm. This unit is equipped with an easy exchangeable impression cylinder to slide the tin or tube on. Also prints of 35 mm wide can be made on tins and cans. With the CTx3 prints of 35 mm or 3x15 mm and regular prints on flat substrates can be produced as well.



Printing on cans and tubes with CTx3

IGT C1 Printability testers

Prints on coated and uncoated materials



Inking the printing disc

OPERATION

The C1 printability testers consist of an inking unit and a printing unit with removable printing disc in one device.

The inking unit consists of two driven aluminium drums and a top roller. Ink

distribution takes about 30 s due to the diameters and the oscillation. The inking time of the printing disc is about 15 s. There are different top rollers for conventional or UV-inks. The printing disc is placed on the guide and moved to the right so that it is inked.

To apply the ink as accurately as possible, the use of an IGT ink pipette is recommended.

The printing unit consists of the printing disc and an impression cylinder. The substrate is attached onto a substrate carrier. The guide is moved to the left and the printing disc is placed on the shaft of the printing unit. The substrate carrier with the substrate is then placed on the substrate guide, between the impression cylinder and the printing disc. By pressing the buttons, the print is made and the printing disc is lifted automatically. Now the substrate can be removed for appraisal.

See instruction video on www.igt.nl.



1

1 Inking the printing form



2

2 Substrate on carrier and printing form on printing shaft



3

3 The print is made and can be removed for appraisal

IGT C1 Printability testers

Range of accessories and consumables



Holder for printing discs, top rollers and timer

The C1 has an accessory to store the printing discs and top rollers during the tests. With this accessory, flat sides at the printing discs and top rollers as a result of a wrong storage can be avoided; the rollers and printing discs are free to the air for optimum evaporation of solvents after cleaning. Overnight storage still has to be done on a dark, clean and cool place. A timer has been added to improve repeatability and accuracy of critical tests.



IGT Ink pipette

The use of an IGT ink pipette is strongly recommended. It increases the accuracy of application of ink and therefore the ink transfer and ink film thickness. There are different ink pipettes:

- Ink pipettes with which the applied volume can be adjusted to the need of each individual test (maximum volume 2 ml) available in a resolution of 0,01 ml or 0,001 ml
- Ink pipettes with a fixed volume of 0,16; 0,24 or 0,40 ml

Reference papers

Prints to check colour and other ink properties can be made on in-company reference papers or production papers. For comparison of test results between organizations or tests according to ISO 2846 it is advised to use an international reference paper. This paper, type C2846 for colour measurement and CT2846 for transparency determination, has been developed in cooperation between IGT and ISO TC130 and is fully compatible with the former APCO material and ISO 2846-1.



Printing discs

The standard printing disc is covered with a rubber or a rubber blanket for conventional inks. Discs are available with rubber or a rubber blanket for UV-curing inks. Furthermore, there is a printing disc with an aluminium surface. The weight of the printing discs is less than 160 g, so they can be weighed on most analytical balances. To print halftones there is a wide choice in special discs with halftone photopolymer 40-70 l/cm. On request these ones can also be customized.



The IGT fixed volume ink pipettes



Reference papers

IGT C1 Printability testers

Excellent reproducibility

PROPERTIES

- Modern design, simply to operate
- Very reliable
- Sturdy construction for intensive use over a long period
- Easy and fast to clean
- Extensive processing possibilities for various substrates and offset inks
- Also suitable for UV-flexo-inks
- Substrate, ink and printing form simple and quickly to change
- Excellent reproducibility; high degree of correlation with press results
- Printing force adjustable between 100 and 1000 N
- Fixed printing speed (C1-V has five different speeds)
- Available in different print width versions:
 - C1: 35 mm
 - C1-5 and C1-V: 50 mm
 - C1-7: 70 mm
 - Cx3: 3x15 mm alongside each other, maximum 35 mm
 - CTx3: 3x15 mm alongside each other, maximum 35 mm
 - CG1 with varnish overprint
- Can diameters 63-68 mm² (CTx3: 16-68 mm)
- Up to 4 mm thick substrate



Ready to use



Adjusting printing force



Sliding disc on shaft



PRINTING MATERIALS

All C1 testers print on a flat substrate of a suitable width for the selected model. If desired it is possible to print directly onto metal cans; for this purpose the can is mounted on the impression cylinder with a diameter between 63 and 68 mm, the substrate carrier is not used in this case.

Printing cans and tubes

To print on cans and tubes with diameters between 16 and 68 mm the CTx3 is used. With this tester the impression cylinder can be exchanged easily by one of the right diameter for the tube or can. The distance between the impression cylinder and printing form is automatically adjusted.

IGT C1 Printability testers

Used for many test methods

	C1	C1-5	C1-V	C1-7	Cx3	CTx3	CG1
Technical data							
Printing disc width	35 mm	50 mm	50 mm	70 mm	3x15 mm	3x15 mm	50
15 mm	○	○	○	○	●	●	○
35 mm	●	●	●	○	●	●	●
50 mm	-	●	●	●	-	-	●
70 mm	-	-	-	●	-	-	-
Printing speed	0,3 m/s	0,3 m/s	0,2-1,0 m/s	0,3 m/s	0,3 m/s	0,3 m/s	0,3
Printing length	200 mm	200 mm	200 mm	200 mm	200 mm	200 mm	200 mm ink 120 mm varnish
Printing on cans/tubes	63-68 mm	63-68 mm	63-68 mm	63-68 mm	63-68 mm	16-68 mm	63-68 mm
General							
Test methods inks	Colour, transparency, density, ink transfer g/m ² , dry properties as coverage, wear resistance, abrasion resistance, flexibility, adhesion, gloss, light fastness, chemical resistance						
Test methods paper/board	Scumming, striking through, halftone printing, back trap mottle, print mottle, print smoothness, set-off						
Compliance	ISO 2834, ISO 2846, ISO 12647, ASTM 7680						
Substrates	Paper, board, metal, plastic, tissue						
Inks	Offset, letterpress, UV-flexo, intaglio, some screen inks						

○ = good ● = excellent - = not possible



Print on reference paper with black band for covering power, colour, transparency, density etc.



Three prints adjacent to each other for colour and density tolerances



Example of halftone print

IGT C1 Printability testers

Specifications

TECHNICAL DATA

Inking unit

- Area 720 cm²
- Two aluminium drums with top roller
- Both aluminium drums driven
- Short inking time: inking unit 30 s and printing disc 15 s
- Short cleaning time
- Independent drive

Printing unit

- Printing speed: 0,3 m/s
For C1-V 0,2 - 1,0 m/s in five steps
- Printing force 100 - 1000 N
- Printing form is automatically brought under pressure, printed and lifted
- Max substrate thickness 4 mm
- Independent drive
- Impression cylinder exchangeable for cylinders with different diameters

General

- Inking unit and printing unit in a single appliance
- Simple operation
- Reliable
- Low initial cost
- Possible to use many substrates and inks
- Possible to process metal cans

Printing discs

- Standard printing width
 - C1 : 35 mm
 - C1-5/C1-V : 50 mm
 - C1-7 : 70 mm
 - Cx3/CTx3 : 35 mm, 3x15 mm
alongside each other
 - CG1 : 50 mm
gravure discs
anilox discs
- Print length: 200 mm
- Weight: <160 g (C1-7 <200 g)
- Types:
 - Rubber for conventional or UV-inks
 - Rubber blanket for conventional or UV-inks
 - Aluminium
 - Halftone photopolymer

Top rollers

Elastomer for conventional or UV-curing inks

Dimensions (HxWxD)

300 x 650 x 400 mm³

Electrical connection

90 – 245 V / 50 – 60 Hz

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IGT Testing Systems

Research, development and production of testing equipment for the printing and allied industries

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