NATIONAL TYPE EVALUATION PROGRAM

Certificate of Conformance

for Weighing and Measuring Devices

For:
Multiple Dimensions Measuring Device
Models: CS5200 and CSN210 Series
Maximum: (see table below)
Minimum: (see table below)
d_{min}: (see table below)

Submitted By:
Mettler-Toledo, LLC
1150 Dearborn Drive
Worthington, OH 43085
Tel: 614-438-4387
Fax: 614-438-4355
Contact: Scott Davidson
Email: scott.davidson@mt.com
Web Site: www.mt.com

Standard Features and Options

*Dynamic Dimensioning of cuboidal, triangular prism, hexagonal prism, cylindrical, toroidal and irregular shaped objects. Only opaque cuboidal, triangular prism, hexagonal prism, cylindrical or toroidal shaped objects are allowed to touch, but not to be stacked on top of one another.

Standard Features:

- RS232 Communication Port
- The CS5200 is a stand-alone dimensioner using patented PILAR® technology.
- The CS5200 and CSN210 use Infrared lasers with parallel beams of light to detect the top and all four sides of the objects being measured.
- A belt contact tachometer.
- The dimension data and message codes are output to a host device or simple display.
- See "Operation" section on page two for minimum operating requirements and screen explanations.

Options: The CS5200 and CSN210 are Available in Three Different Models (Depending on the Width of the Conveyor Belt)

- Belt Widths Up to 24 inches: CS5200.1, CSN210.1
- Belt Widths Up to 48 inches: CS5200.2, CSN210.2
- Belt Widths Up to 72 inches: CS5200.3, CSN210.3
- The Mettler Toledo CSM software is an example of a PC application that allows viewing of the dimension data sent by the CS5200 or CSN210. For stand-alone systems without a PC, a simple display can be used to display the dimensions.

Dimensioning Designation:

Dimensions	d	Minimum	Maximum	Maximum Velocity
Length Width Height	0.2 in 0.2 in (see note below)	2.4 inches 2.4 inches (see note below)	144 inches 54 inches 36 inches	36 ft/min to under 400 ft/min.
Length Width Height	0.2 in 0.2 in (see note below)	2.4 inches 2.4 inches (see note below)	82 inches 36 inches 36 inches	400 ft/min to 600 ft/min.

Note: CSN210 - Height "d" is single range (0.2 in from 2.4 in to 36 in) or multi-interval (0.1 in from 1.2 in to 3 in and 0.2 from 3.0 in to 36 in)
CS5200 – Height "d" is single range (0.2 in from 2.4 in to 36 in)
Length = Longest Dimension in the Horizontal Axis **Width** = Shortest Dimension in the Horizontal Axis **Height** = From Top of the Belt and Up
Temperature Range: -10 ºC to 40 ºC (14 ºF to 104 ºF)

This device was evaluated under the National Type Evaluation Program and was found to comply with the applicable technical requirements of "NIST Handbook 44: Specifications, Tolerances and Other Technical Requirements for Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Ronald Hayes
Chairman, NCWM, Inc.

John Gaccione
Chairman, National Type Evaluation Program Committee
Issued: July 31, 2014

1135 M Street, Suite 110 / Lincoln, Nebraska 68508

Mettler-Toledo, LLC

Multiple Dimensions Measuring Device / CS5200 and CSN210 Series

Application: The CS5200, CSN210 is used to calculate the dimensions of opaque cuboidal, triangular prism, hexagonal prism, cylindrical, toroidal and irregular shaped objects. More than one object can be (scanned) measured simultaneously. The edges or surfaces of cuboidal, triangular prism, hexagonal prism, cylindrical or toroidal shaped objects may be touching. Objects may not be stacked.

Identification: The required information appears on an adhesive badge attached to the side of the device housing.

Sealing: The CS5200 uses a physical wire seal which is threaded through two bolt heads after setup is complete. The CSN210 uses a Category 3 audit trail.

Operation: The dynamic dimensioning system works with conveyor systems. Objects must pass on the conveyor below the Dimensioner. A belt contact tachometer is mounted in a location that allows it to contact the belt. Normally the tachometer is mounted on the underside of the conveyor, contacting the bottom side of the conveyor belt.

The dimension data and message codes are output to a PC or simple display. The majority of applications will have a PC running Mettler-Toledo CSM software. This software is used to display the dimension data and can also be used to collect and merge barcode data (optional) and weight data from a scale (optional).

When configured to dimension irregular shapes, the object must be placed on the belt with the most stable side down. The CS5200, CSN210 will report the smallest dimensions of a cuboidal that the irregular shaped object would fit into. The irregular shaped object must not be touching any other object; however it may be placed singulated or non-singulated (side by side) with other objects on the belt.

Test Conditions: This Certificate supersedes Certificate of Conformance number 06-113PA2 and is issued without additional tests to reactivate Certificate of Conformance number 06-113PA2 without lapse. Previous test conditions are listed below for reference.

Certificate of Conformance Number 06-113PA2: This Certificate supersedes Certificate of Conformance Number 06-113PA1 and is issued to include multi-interval feature capability with d_{min} of 0.1 inch for height from 1.2 inch to 3.0 inch and touching feature for triangular prisms. For the purposes of this evaluation, one CSN210 system was submitted for evaluation. Several measurements were performed just below minimum and just above minimum to verify d_{min} for height. Additional test were performed with triangular prism touching objects.

Certificate of Conformance Number 06-113PA1: This Certificate supersedes Certificate of Conformance Number 06-113P and is issued to add triangular prism, hexagonal prism, cylindrical, toroidal and irregular shaped object detection. For the purposes of this evaluation, one CS5200 system controller, laser bar code scanner, display, and one tachometer were submitted for evaluation. The emphasis of the evaluation was on operation and performance with triangular prism, hexagonal prism, cylindrical, toroidal and irregular shaped objects. Several measurements were performed in singulated and non-singulated (side by side; not touching) mode with cuboidal, triangular prism, hexagonal prism, cylindrical, toroidal, and irregular shaped objects.

Certificate of Conformance Number 06-113P: For the purpose of this evaluation, CS5200 was submitted for evaluation. The CS5200 is a version of the CS900 (05-030P) except the dimensioning device is at a 90 degree angle to the belt. The emphasis of the evaluation was on device design, marking, operation, and to increase the belt speed. Several measurements were performed near maximum, near minimum, and near mid-range for the range listed. Additionally, data from the CS 900 and a letter from the manufacture stating there is no metrological difference in software from the CS900 was used.

NOTE: This Certificate is issued as a provisional NTEP Certificate of Conformance (CC). This evaluation is based on the current draft checklist, procedures and technical policy contained in NCWM Publication 14 for this device type. When work on the NCWM Publication 14 section for this device is completed, the test report and this NTEP CC will be reviewed. If all current requirements have been met by this evaluation, the provisional status will be removed.

Evaluated By: T. Lucas (OH) 06-113P; M. Kelley (OH) 06-113PA1; J. Morrison (OH) 06-113PA1, 06-113PA2

Type Evaluation Criteria Used: NIST, Handbook 44: Specifications, Tolerances and Other Technical Requirements for Weighing and Measuring Devices, 2012. NCWM, Publication 14: Weighing Devices, 2012.

Mettler-Toledo, LLC

Multiple Dimensions Measuring Device / CS5200 and CSN210 Series

Conclusion: The results of the evaluation and information provided by the manufacturer indicate the device complies with applicable requirements.

Information Reviewed By: S. Patoray (NCWM), L. Bernetich (NCWM) 06-113P; J. Truex (NCWM) 06-113PA1, 06-113PA2, 06-113PA3

Example of Device:

Models CS5200 and CSN210