



Certificate

for
Radiation Device

Certificate Number R-094-0116-2-2030	Date of Issue March 02, 2015	Date of Expiry February 28, 2030
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The radiation device identified below is certified by the Canadian Nuclear Safety Commission pursuant to paragraph 21(1)(h) of the *Nuclear Safety and Control Act* and section 12 of the *Nuclear Substances and Radiation Devices Regulations*.

Manufacturer: Endress & Hauser GmbH + Co.

Make and Model: Endress & Hauser FQG63

Prev. Mfr. Name:

Device Type: FIXED GAUGE

Description: Reference CNSC Application No. 44100 and 48587.

The radiation device consists of a spherical housing, a source holder system, connection flanges and an extension rope.

The spherical housing is made from 3 mm thick stainless steel and is filled with lead and contains a central tube to hold the source holder system.

The source holder system is made of source holder rod, swivel insert, retaining plate, and protection cap. The source is placed inside a source protection cap which is attached to the end of source holder rod. The source holder rod is placed inside the swivel insert.

A flange is welded to the housing and an adaptor flange is used to align the device with the flange on the process vessel. A double walled protection tube must be installed inside the process vessel to provide a safe space for moving the source inside the process vessel.

The extension rope is attached to the source holder rod through a ball joint connection and controls the position of the source inside the process vessel. A locking bolt, that can be locked using a padlock, fixes the source rod holder in place. A second locking bolt and padlock keep the device in off position by preventing the swivel action.

The housing sphere is 232 mm in diameter and the total length of device from the flange to the top of the protection cap is 512 mm. The device weighs approximately 87 kg.

The radiation device may contain one of the following sealed sources in quantity not exceeding the corresponding quantity indicated:

- 1- 74 GBq of Cs-137 in sealed source model VZ-357-001 manufactured by Eckert & Ziegler Nuclitec
- 2- 18.5 GBq of Cs-137 in sealed source model VZ-79-001 manufactured by Eckert & Ziegler Nuclitec
- 3- 18.5 GBq of Cs-137 in sealed source model VZ-1508-001 manufactured by Eckert & Ziegler Nuclitec
- 4- 74 GBq of Cs-137 in sealed source model VZ-3579-001 manufactured by Eckert & Ziegler Nuclitec
- 5- 55.5 GBq of Cs-137 in sealed source model VZ-1726-001 manufactured by Eckert & Ziegler Nuclitec



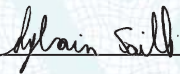


- 6- 18.5 GBq of Cs-137 in sealed source model P01 manufactured by Eckert & Ziegler Nuclitec
- 7- 18.5 GBq of Cs-137 in sealed source model P02 manufactured by Eckert & Ziegler Nuclitec
- 8- 18.5 GBq of Cs-137 in sealed source model P03 manufactured by Eckert & Ziegler Nuclitec
- 9- 185 GBq of Cs-137 in sealed source model P04 manufactured by Eckert & Ziegler Nuclitec
- 10- 3.7 GBq of Co-60 in sealed source model P04 manufactured by Eckert & Ziegler Nuclitec
- 11- 3.7 GBq of Co-60 in sealed source model VZ-64-001 manufactured by Eckert & Ziegler Nuclitec
- 12- 3.7 GBq of Co-60 in sealed source model VZ-1486-001 manufactured by Eckert & Ziegler Nuclitec
- 13- 11.1 GBq of Cs-137 in sealed source model X.8 manufactured by QSA Global, Inc.
- 14- 111 GBq of Cs-137 in sealed source model X.9 manufactured by QSA Global, Inc.

For additional information, please refer to the Summary Evaluation (CNSC Document No. 3866790)

The radiation device may contain any of the following nuclear substances in a quantity not exceeding the corresponding quantity indicated:

Nuclear Substance	Maximum Quantity
Cobalt 60 Cesium 137	3700 MBq 185 GBq


Designated Officer pursuant to paragraph 37(2)(a) of the
Nuclear Safety and Control Act

