

```

1  <?xml version="1.0" ?>
2  <dcc:digitalCalibrationCertificate xmlns:dcc="https://ptb.de/dcc" xmlns:si="
https://ptb.de/si" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="https://ptb.de/dcc https://ptb.de/dcc/v2.2.0/dcc.xsd">
3  <!--
4      Copyright (c) 2019 - Physikalisch-Technische Bundesanstalt, alle Rechte
5      vorbehalten - all rights reserved
6
7      Diese Software wurde in der Physikalisch-Technischen Bundesanstalt
8      entwickelt. Die Software wird unentgeltlich, wie sie ist, auf eigenes
9      Risiko des Nutzers zur Verfügung gestellt. Die PTB übernimmt keine Haftung,
10     egal aus welchem Rechtsgrund, für die Nutzung der Software durch Andere und
11     garantiert weder ausdrücklich noch konkludent für die Qualität, Sicherheit,
12     Zuverlässigkeit, Tauglichkeit, oder andere Merkmale der Software. Soweit
13     gesetzlich zulässig lehnt die PTB jede Haftung für direkte Schäden,
14     indirekte Schäden oder für Folgeschäden ab, die durch die Nutzung der
15     Software entstehen. This software was developed at the
16     Physikalisch-Technische Bundesanstalt (PTB).
17
18     The software is made available "as is" free of cost at your own risk. PTB
19     assumes no responsibility whatsoever for its use by other parties, and
20     makes no guarantees, expressed or implied, about its quality, reliability,
21     safety, suitability or any other characteristic. As far as legally
22     permitted PTB refuses any liability for any direct, indirect or
23     consequential damage arising in connection with the use of this software.
24 -->
25 <dcc:administrativeData>
26   <dcc:coreData>
27     <dcc:countryCodeISO3166_1>DE</dcc:countryCodeISO3166_1>
28     <dcc:usedLangCodeISO639_1>en</dcc:usedLangCodeISO639_1>
29     <dcc:mandatoryLangCodeISO639_1>en</dcc:mandatoryLangCodeISO639_1>
30     <dcc:uniqueIdentifier>75999PTB19</dcc:uniqueIdentifier>
31     <dcc:receiptDate>2019-12-05</dcc:receiptDate>
32     <dcc:beginPerformanceDate>2019-11-25</dcc:beginPerformanceDate>
33     <dcc:endPerformanceDate>2019-11-25</dcc:endPerformanceDate>
34   </dcc:coreData>
35   <dcc:items>
36     <dcc:name>
37       <dcc:content lang="en">Capacitance Diaphragm Gauge</dcc:content>
38     </dcc:name>
39     <dcc:item>
40       <dcc:name>
41         <dcc:content lang="en">Controller: PDR-5B, Head: 627F1TDD1B</dcc:content>
42       </dcc:name>
43       <dcc:description>
44         <dcc:content lang="en">device under test</dcc:content>
45       </dcc:description>
46       <dcc:manufacturer>
47         <dcc:name>
48           <dcc:content lang="en">MKS Instruments Inc.</dcc:content>
49         </dcc:name>
50       </dcc:manufacturer>
51       <dcc:identifications>
52         <dcc:identification>
53           <dcc:issuer>manufacturer</dcc:issuer>
54           <dcc:value>Controller: 96061406A, Head: 019058896</dcc:value>
55           <dcc:description>
56             <dcc:content lang="en">Serial No.</dcc:content>
57           </dcc:description>
58         </dcc:identification>
59         <dcc:identification id="geschaeftszeichen">
60           <dcc:issuer>calibrationLaboratory</dcc:issuer>
61           <dcc:value>7.5-9.9-19-99-99</dcc:value>
62           <dcc:description>
63             <dcc:content lang="en">Reference No.</dcc:content>
64           </dcc:description>
65         </dcc:identification>
66       </dcc:identifications>
67     </dcc:item>
68   </dcc:items>
69   <dcc:calibrationLaboratory>
70     <dcc:contact>

```

Das Geschäftszeichen ist ein PTB-internes Zeichen und hat nichts mit dem Hersteller zu tun.

```

71     <dcc:name>
72     <dcc:content lang="en">Physikalisch-Technische Bundesanstalt (PTB)
73     </dcc:content>
74 </dcc:name>
75 <dcc:eMail>vacuum.cal@ptb.de</dcc:eMail>
76 <dcc:location>
77     <dcc:further>
78     <dcc:content lang="en">Working Group 7.54 Vacuum Metrology</dcc:content>
79     </dcc:further>
80     <dcc:street>Abbestraße</dcc:street>
81     <dcc:streetNo>2-12</dcc:streetNo>
82     <dcc:postCode>10178</dcc:postCode>
83     <dcc:city>Berlin</dcc:city>
84     <dcc:countryCode>DE</dcc:countryCode>
85 </dcc:location>
86 </dcc:contact>
87 </dcc:calibrationLaboratory>
88 <dcc:respPersons>
89     <dcc:respPerson id="Responsible">
90         <dcc:person>
91             <dcc:name>
92                 <!-- UTF 8? -->
93                 <!-- Dr. Matthias Bernien -->
94             </dcc:name>
95             <dcc:eMail>Matthias.Bernien@ptb.de</dcc:eMail>
96         </dcc:person>
97         <dcc:mainSigner>true</dcc:mainSigner>
98     </dcc:respPerson>
99     <dcc:respPerson id="Technician">
100         <dcc:person>
101             <dcc:name>
102                 <!-- Thomas Bock -->
103             </dcc:name>
104             <dcc:eMail>Thomas.Bock@ptb.de</dcc:eMail>
105         </dcc:person>
106     </dcc:respPerson>
107 </dcc:respPersons>
108 <dcc:customer>
109     <dcc:name>
110     <!-- The Vacuum Company -->
111     </dcc:name>
112     <dcc:eMail>Billy.Smith@xyzmail.com</dcc:eMail>
113     <dcc:location>
114     <!-- 1 West 72nd Street -->
115     <!-- 10023 -->
116     <!-- New York City -->
117     <!-- US -->
118     </dcc:location>
119 </dcc:customer>
120 <dcc:dccSoftware>
121     <!-- software -->
122     <!-- vl-dcc -->
123     <!-- 1.0.8-10363d77443b4062d7eb05d3304323bb814a451e -->
124     </dcc:software>
125 </dcc:dccSoftware>
126 </dcc:administrativeData>
127 <!-- measurementResults -->
128 <!-- measurementResult -->
129 <!-- usedMethods -->
130 <!-- 00170 -->
131 <!-- Ein Relikt aus Urzeiten :-)-->
132 <!-- usedMethod -->
133 <!-- 1700M -->
134 <!-- name -->
135 <!-- Description relating to calibration device -->
136 </dcc:name>
137 <!-- 17010 -->
138 <!-- description -->
139 <!-- Method1 -->

```

<![CDATA[Diskussion mit Justin und Alexander

The device was equipped with a DN16CF all-metal angle valve. During

```

transport it was closed under vacuum.
142 ]]></dcc:content>
143 <!--92110-->
144 <dcc:content>
145 <![CDATA[
Diskussion mit Justin und Alexander
146 The customer provided the complete calibration chain consisting of the head
two multiplexers and a digital multimeter which was used to read out the
voltage output via the TCP interface (port 5025). The voltage reading was
multiplied by \SI{1.33322}{\pascal\per\volt} to obtain the indicated
pressure in \si{\pascal}.
147 ]]></dcc:content>
148 <!--92110--></dcc:description>
149 </dcc:usedMethod>
150 <dcc:usedMethod>
151 <!--1700M-->
152 <dcc:name>
153 <dcc:content>Calibration procedure</dcc:content>
154 </dcc:name>
155 <!--17010-->
156 <dcc:description id="Method2">
157 <!--17020-->
158 <dcc:content>
159 <![CDATA[
160 \label{sec:procedure} The calibration was carried out at the laboratory
for vacuum metrology at the Physikalisch-Technische Bundesanstalt
(PTB). In the pressure range from \(\SI{1.3e-01}{\Pa}\) to
\(\SI{1.3e+01}{\Pa}\), the calibration pressure was established in the
primary standard SE3 metrologically linked to the primary standard SE2 of
PTB applying the static expansion method. The gas temperature
during calibration using the static expansion method with nitrogen was
\SI{296.066+-0.068}{\kelvin} at a room temperature of
\SI{296.01+-0.05}{\kelvin}.
161 ]]></dcc:content>
162 <!--92110-->
163 <dcc:content>
164 <![CDATA[
165 The device was operated with the following setup:
\begin{itemize}[leftmargin=1cm]
166
167 \item[\textbf{\texttt{Heater}:}] \texttt{On}
168
169 \item[\textbf{\texttt{Unit}:}] \texttt{V}
170
171 \end{itemize}
172 ]]></dcc:content>
173 <!--92110-->
174 <dcc:content>
175 <![CDATA[
176 An offset (\`zero&#39;&#39;) sample including its scatter was measured
before the calibration at a base pressure below \(\SI{1E-6}{\pascal}\). For
each generated calibration pressure, the mean of 10 readings of the customer
gauge was taken. Before each calibration point the offset \((p_{\text{r}})\) (10
readings) was checked at the base pressure and subtracted from the
subsequent indication \((p_{\text{ind}})\) to give the corrected indicated value
\((p_{\text{corr}})\).
177 ]]></dcc:content>
178 <!--92110--></dcc:description>
179 </dcc:usedMethod>
180 <dcc:usedMethod>
181 <!--1700M-->
182 <dcc:name>
183 <dcc:content>Relative error of pressure indication and correction factor
</dcc:content>
184 </dcc:name>
185 <!--17010-->
186 <dcc:description id="Method3">
187 <!--17020-->
188 <dcc:content>
189 <![CDATA[
190 The relative error \((e)\) of the corrected indicated pressure
\((p_{\text{corr}})\) (with \((p_{\text{corr}} = p_{\text{ind}} - p_{\text{r}})\)) at
the time of calibration is defined as:\[e = \frac{p_{\text{ind}} -

```

$p_{\text{r}}\{p_{\text{cal}}\} - 1$ where (p_{cal}) denotes the calibration pressure as generated in the primary standard. From this, the real pressure (p) can be calculated from the indicated and offset pressure by: $[p = \frac{p_{\text{ind}} - p_{\text{r}}}{e + 1}]$

<!--92110-->

<!--92110-->

<!--92110-->

The correction factor (CF) is defined by: $[CF = \frac{p_{\text{cal}}}{p_{\text{ind}} - p_{\text{r}}}]$ and can be used to calculate the real pressure (p) by: $[p = CF (p_{\text{ind}} - p_{\text{r}})]$

<!--92110-->

<!--92110-->

<!--92110-->

<!--92110-->

"Result of Calibration" ist hier falsch platziert, da es im Bereich "usedMethod" aufgeföhrt ist.

<!--1700M-->

<!--1700M-->

<!--1700M-->

<!--1700M-->

<!--1700M-->

<!--1700M-->

<!--1700M-->

<!--1700M-->

The results of the measurements are given in the following table. $(U(e))$ is the uncertainty of the relative error and $(U(CF))$ the uncertainty of the correction factor. Included is the repeatability of the measurement under otherwise identical conditions (p_{cal}) , (T) .

<!--1700M-->

<!--1700M-->

<!--1700M-->

<!--1700M-->

<!--1700M-->

<!--1700M-->

<!--1700M-->

<!--1700M-->

<!--1700M-->

<!--1700M-->

<!--1700M-->

<!--1700M-->

<!--1700M-->

<!--1700M-->

$\text{section}\{\text{Temperature correction}\}$
In the molecular flow regime the relative deviation (e) depends on the temperature difference between the thermostated head and the gas in the calibration chamber. In the transition regime between molecular flow (ideal gas-independent pressure difference due to thermal transpiration) and viscous flow (no pressure difference), which is roughly between $(0.1\{\text{pascal}\})$ and $(100\{\text{pascal}\})$, the deviation is temperature and gas-species dependent. If during use of the gauge the gas temperature is significantly different $(1\{\text{kelvin}\})$ or more) from the temperature during calibration, an additional correction must be applied in the transition and molecular flow regime and used for the calculation of (p) :
 $[e_{\text{vis}} = e_{\text{vis}} + (e - e_{\text{vis}}) \frac{\sqrt{T_2/T_1} - 1}{\sqrt{T_2/T_1} - 1}]$ If the correction factor (CF) is used:
 $[CF_{\text{vis}} = CF_{\text{vis}}]$

$$+ (CF - CF_{\text{vis}}) \frac{\sqrt{T_2 / (T_1 - 1)}}{\sqrt{T_2 / T_1 - 1}}$$
 where (T_1) (in K) is the gas temperature during calibration, (T_1) (in K) the temperature of the gas at use, (T_2) (in K) the temperature of the thermostated head, (e_{vis}) and (CF_{vis}) the average indication error and the average correction factor in the viscous flow regime ($> 100 \text{ Pa}$), respectively. (e) and (CF) are the error and the correction factor in the molecular flow and transition regime ($< 100 \text{ Pa}$), respectively. For the measurement with nitrogen the following values are estimated: $(e_{\text{vis}} = 0.0010)$ and $(CF_{\text{vis}} = 0.9990)$.

```

224 ]]>
225
226     </dcc:content>
227     <!--92110--></dcc:description>
228 </dcc:usedMethod>
229 <dcc:usedMethod>
230     <!--1700M-->
231     <dcc:name>
232     <dcc:content>Uncertainty</dcc:content>
233     </dcc:name>
234     <!--17010-->
235     <dcc:description id="Method6">
236     <!--17020-->
237     <dcc:content>
238 <![CDATA[
239     The uncertainty stated is the expanded measurement uncertainty obtained by
    multiplying the standard measurement uncertainty by the coverage factor
     $k=2$ . It has been determined in accordance with the "Guide to the
    Expression of Uncertainty in Measurement (GUM)". The value of the
    measurand then normally lies, with a probability of approximately
    95%, within the attributed coverage interval.
240 ]]></dcc:content>
241     <!--92110--></dcc:description>
242     </dcc:usedMethod>
243 </dcc:usedMethods>
244 <dcc:influenceConditions>
245     <dcc:influenceCondition>
246     <dcc:name>
247     <dcc:content lang="en">Ambient conditions for the measurement with the
    test gas N2</dcc:content>
248     </dcc:name>
249     <dcc:data>
250     <dcc:list>
251     <dcc:name>
252     <dcc:content lang="en">The calibration was carried out under the
    following ambient conditions</dcc:content>
253     </dcc:name>
254     <dcc:list>
255     <dcc:quantity>
256     <dcc:name>
257     <dcc:content lang="en">gas temperature</dcc:content>
258     </dcc:name>
259     <si:real>
260     <si:value>296.066</si:value>
261     <si:unit>\kelvin</si:unit>
  
```

```

262         <si:expandedUnc>
263         <si:uncertainty>0.068</si:uncertainty>
264         <si:coverageFactor>2</si:coverageFactor>
265         <si:coverageProbability>0.95</si:coverageProbability>
266         </si:expandedUnc>
267     </si:real>
268 </dcc:quantity>
269 <dcc:quantity>
270     <dcc:name>
271     <dcc:content lang="en">room temperature</dcc:content>
272     </dcc:name>
273     <si:real>
274     <si:value>296.01</si:value>
275     <si:unit>\kelvin</si:unit>
276     <si:expandedUnc>
277     <si:uncertainty>0.05</si:uncertainty>
278     <si:coverageFactor>2</si:coverageFactor>
279     <si:coverageProbability>0.95</si:coverageProbability>
280     </si:expandedUnc>
281     </si:real>
282 </dcc:quantity>
283 </dcc:list>
284 </dcc:list>
285 </dcc:data>
286 </dcc:influenceCondition>
287 </dcc:influenceConditions>
288 <dcc:results>
289     <dcc:result>
290     <dcc:name>
291     <dcc:content lang="en">nitrogen, static expansion method</dcc:content>
292     </dcc:name>
293     <dcc:description>
294     <dcc:content lang="en">Name: calibration pressure, Quantity: Pressure
295     </dcc:content>
296     </dcc:description>
297     <dcc:data>
298     <dcc:list>
299     <dcc:quantity>
300     <si:real>
301     <si:value>1.3120e-01</si:value>
302     <si:unit>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:unit>
303     <si:expandedUnc>
304     <si:uncertainty>0.00026</si:uncertainty>
305     <si:coverageFactor>2</si:coverageFactor>
306     <si:coverageProbability>0.95</si:coverageProbability>
307     </si:expandedUnc>
308     </si:real>
309 </dcc:quantity>
310 <dcc:quantity>
311 <si:real>
312 <si:value>2.0050e-01</si:value>
313 <si:unit>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:unit>
314 <si:expandedUnc>
315 <si:uncertainty>0.00040</si:uncertainty>
316 <si:coverageFactor>2</si:coverageFactor>
317 <si:coverageProbability>0.95</si:coverageProbability>
318 </si:expandedUnc>
319 </si:real>
320 </dcc:quantity>
321 <dcc:quantity>
322 <si:real>
323 <si:value>3.0021e-01</si:value>
324 <si:unit>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:unit>
325 <si:expandedUnc>
326 <si:uncertainty>0.00055</si:uncertainty>
327 <si:coverageFactor>2</si:coverageFactor>
328 <si:coverageProbability>0.95</si:coverageProbability>
329 </si:expandedUnc>
330 </si:real>
331 </dcc:quantity>
332 <dcc:quantity>
333 <si:real>

```

Ab hier wird die Tabelle spaltenweise dargestellt. Dabei wird bei jeder Spalte der Name der Tabelle wiederholt, was so nicht stimmig ist.
Weiterhin fehlt der beschreibende Text zu "Result of Calibration", der weiter oben bei usedMethod (id=Method6) steht.

```

333         <si:value>5.0047e-01</si:value>
334         <si:unit>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:unit>
335         <si:expandedUnc>
336             <si:uncertainty>0.00092</si:uncertainty>
337             <si:coverageFactor>2</si:coverageFactor>
338             <si:coverageProbability>0.95</si:coverageProbability>
339         </si:expandedUnc>
340     </si:real>
341 </dcc:quantity>
342 <dcc:quantity>
343     <si:real>
344         <si:value>8.9922e-01</si:value>
345         <si:unit>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:unit>
346         <si:expandedUnc>
347             <si:uncertainty>0.0015</si:uncertainty>
348             <si:coverageFactor>2</si:coverageFactor>
349             <si:coverageProbability>0.95</si:coverageProbability>
350         </si:expandedUnc>
351     </si:real>
352 </dcc:quantity>
353 <dcc:quantity>
354     <si:real>
355         <si:value>1.2969e+00</si:value>
356         <si:unit>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:unit>
357         <si:expandedUnc>
358             <si:uncertainty>0.0022</si:uncertainty>
359             <si:coverageFactor>2</si:coverageFactor>
360             <si:coverageProbability>0.95</si:coverageProbability>
361         </si:expandedUnc>
362     </si:real>
363 </dcc:quantity>
364 <dcc:quantity>
365     <si:real>
366         <si:value>1.9948e+00</si:value>
367         <si:unit>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:unit>
368         <si:expandedUnc>
369             <si:uncertainty>0.0034</si:uncertainty>
370             <si:coverageFactor>2</si:coverageFactor>
371             <si:coverageProbability>0.95</si:coverageProbability>
372         </si:expandedUnc>
373     </si:real>
374 </dcc:quantity>
375 <dcc:quantity>
376     <si:real>
377         <si:value>2.9906e+00</si:value>
378         <si:unit>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:unit>
379         <si:expandedUnc>
380             <si:uncertainty>0.0051</si:uncertainty>
381             <si:coverageFactor>2</si:coverageFactor>
382             <si:coverageProbability>0.95</si:coverageProbability>
383         </si:expandedUnc>
384     </si:real>
385 </dcc:quantity>
386 <dcc:quantity>
387     <si:real>
388         <si:value>4.9838e+00</si:value>
389         <si:unit>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:unit>
390         <si:expandedUnc>
391             <si:uncertainty>0.0086</si:uncertainty>
392             <si:coverageFactor>2</si:coverageFactor>
393             <si:coverageProbability>0.95</si:coverageProbability>
394         </si:expandedUnc>
395     </si:real>
396 </dcc:quantity>
397 <dcc:quantity>
398     <si:real>
399         <si:value>8.9682e+00</si:value>
400         <si:unit>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:unit>
401         <si:expandedUnc>
402             <si:uncertainty>0.015</si:uncertainty>
403             <si:coverageFactor>2</si:coverageFactor>
404             <si:coverageProbability>0.95</si:coverageProbability>

```

```

405         </si:expandedUnc>
406     </si:real>
407 </dcc:quantity>
408 <dcc:quantity>
409     <si:real>
410         <si:value>1.29500e+01</si:value>
411         <si:unit>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:unit>
412         <si:expandedUnc>
413             <si:uncertainty>0.019</si:uncertainty>
414             <si:coverageFactor>2</si:coverageFactor>
415             <si:coverageProbability>0.95</si:coverageProbability>
416         </si:expandedUnc>
417     </si:real>
418 </dcc:quantity>
419 </dcc:list>
420 </dcc:data>
421 </dcc:result>
422 <dcc:result>
423     <dcc:name>
424         <dcc:content lang="en">nitrogen, static expansion method</dcc:content>
425     </dcc:name>
426     <dcc:description>
427         <dcc:content lang="en">Name: offset corrected indicated pressure,
         Quantity: Pressure</dcc:content>
428     </dcc:description>
429 <dcc:data>
430     <dcc:list>
431         <dcc:quantity>
432             <si:real>
433                 <si:value>1.3636e-01</si:value>
434                 <si:unit>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:unit>
435                 <si:expandedUnc>
436                     <si:uncertainty>0.00031</si:uncertainty>
437                     <si:coverageFactor>2</si:coverageFactor>
438                     <si:coverageProbability>0.95</si:coverageProbability>
439                 </si:expandedUnc>
440             </si:real>
441         </dcc:quantity>
442         <dcc:quantity>
443             <si:real>
444                 <si:value>2.0856e-01</si:value>
445                 <si:unit>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:unit>
446                 <si:expandedUnc>
447                     <si:uncertainty>0.00040</si:uncertainty>
448                     <si:coverageFactor>2</si:coverageFactor>
449                     <si:coverageProbability>0.95</si:coverageProbability>
450                 </si:expandedUnc>
451             </si:real>
452         </dcc:quantity>
453         <dcc:quantity>
454             <si:real>
455                 <si:value>3.1144e-01</si:value>
456                 <si:unit>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:unit>
457                 <si:expandedUnc>
458                     <si:uncertainty>0.00055</si:uncertainty>
459                     <si:coverageFactor>2</si:coverageFactor>
460                     <si:coverageProbability>0.95</si:coverageProbability>
461                 </si:expandedUnc>
462             </si:real>
463         </dcc:quantity>
464         <dcc:quantity>
465             <si:real>
466                 <si:value>5.1780e-01</si:value>
467                 <si:unit>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:unit>
468                 <si:expandedUnc>
469                     <si:uncertainty>0.00086</si:uncertainty>
470                     <si:coverageFactor>2</si:coverageFactor>
471                     <si:coverageProbability>0.95</si:coverageProbability>
472                 </si:expandedUnc>
473             </si:real>
474         </dcc:quantity>
475     </dcc:quantity>

```



```

476         <si:real>
477         <si:value>9.263e-01</si:value>
478         <si:unit>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:unit>
479         <si:expandedUnc>
480         <si:uncertainty>0.0015</si:uncertainty>
481         <si:coverageFactor>2</si:coverageFactor>
482         <si:coverageProbability>0.95</si:coverageProbability>
483         </si:expandedUnc>
484     </si:real>
485 </dcc:quantity>
486 <dcc:quantity>
487     <si:real>
488     <si:value>1.3312e+00</si:value>
489     <si:unit>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:unit>
490     <si:expandedUnc>
491     <si:uncertainty>0.0021</si:uncertainty>
492     <si:coverageFactor>2</si:coverageFactor>
493     <si:coverageProbability>0.95</si:coverageProbability>
494     </si:expandedUnc>
495     </si:real>
496 </dcc:quantity>
497 <dcc:quantity>
498     <si:real>
499     <si:value>2.0380e+00</si:value>
500     <si:unit>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:unit>
501     <si:expandedUnc>
502     <si:uncertainty>0.0033</si:uncertainty>
503     <si:coverageFactor>2</si:coverageFactor>
504     <si:coverageProbability>0.95</si:coverageProbability>
505     </si:expandedUnc>
506     </si:real>
507 </dcc:quantity>
508 <dcc:quantity>
509     <si:real>
510     <si:value>3.0425e+00</si:value>
511     <si:unit>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:unit>
512     <si:expandedUnc>
513     <si:uncertainty>0.0049</si:uncertainty>
514     <si:coverageFactor>2</si:coverageFactor>
515     <si:coverageProbability>0.95</si:coverageProbability>
516     </si:expandedUnc>
517     </si:real>
518 </dcc:quantity>
519 <dcc:quantity>
520     <si:real>
521     <si:value>5.0428e+00</si:value>
522     <si:unit>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:unit>
523     <si:expandedUnc>
524     <si:uncertainty>0.0081</si:uncertainty>
525     <si:coverageFactor>2</si:coverageFactor>
526     <si:coverageProbability>0.95</si:coverageProbability>
527     </si:expandedUnc>
528     </si:real>
529 </dcc:quantity>
530 <dcc:quantity>
531     <si:real>
532     <si:value>9.037e+00</si:value>
533     <si:unit>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:unit>
534     <si:expandedUnc>
535     <si:uncertainty>0.014</si:uncertainty>
536     <si:coverageFactor>2</si:coverageFactor>
537     <si:coverageProbability>0.95</si:coverageProbability>
538     </si:expandedUnc>
539     </si:real>
540 </dcc:quantity>
541 <dcc:quantity>
542     <si:real>
543     <si:value>1.3027e+01</si:value>
544     <si:unit>\kilogram\metre\tothe{-1}\second\tothe{-2}</si:unit>
545     <si:expandedUnc>
546     <si:uncertainty>0.0078</si:uncertainty>
547     <si:coverageFactor>2</si:coverageFactor>

```

```

548         <si:coverageProbability>0.95</si:coverageProbability>
549     </si:expandedUnc>
550 </si:real>
551 </dcc:quantity>
552 </dcc:list>
553 </dcc:data>
554 </dcc:result>
555 <dcc:result>
556     <dcc:name>
557         <dcc:content lang="en">nitrogen, static expansion method</dcc:content>
558     </dcc:name>
559     <dcc:description>
560         <dcc:content lang="en">Name: relative error of indication, Quantity:
          Error</dcc:content>
561     </dcc:description>
562     <dcc:data>
563         <dcc:list>
564             <dcc:quantity>
565                 <si:real>
566                     <si:value>0.0394</si:value>
567                     <si:unit>\one</si:unit>
568                     <si:expandedUnc>
569                         <si:uncertainty>0.0033</si:uncertainty>
570                         <si:coverageFactor>2</si:coverageFactor>
571                         <si:coverageProbability>0.95</si:coverageProbability>
572                     </si:expandedUnc>
573                 </si:real>
574             </dcc:quantity>
575             <dcc:quantity>
576                 <si:real>
577                     <si:value>0.0402</si:value>
578                     <si:unit>\one</si:unit>
579                     <si:expandedUnc>
580                         <si:uncertainty>0.0030</si:uncertainty>
581                         <si:coverageFactor>2</si:coverageFactor>
582                         <si:coverageProbability>0.95</si:coverageProbability>
583                     </si:expandedUnc>
584                 </si:real>
585             </dcc:quantity>
586             <dcc:quantity>
587                 <si:real>
588                     <si:value>0.0374</si:value>
589                     <si:unit>\one</si:unit>
590                     <si:expandedUnc>
591                         <si:uncertainty>0.0027</si:uncertainty>
592                         <si:coverageFactor>2</si:coverageFactor>
593                         <si:coverageProbability>0.95</si:coverageProbability>
594                     </si:expandedUnc>
595                 </si:real>
596             </dcc:quantity>
597             <dcc:quantity>
598                 <si:real>
599                     <si:value>0.0346</si:value>
600                     <si:unit>\one</si:unit>
601                     <si:expandedUnc>
602                         <si:uncertainty>0.0027</si:uncertainty>
603                         <si:coverageFactor>2</si:coverageFactor>
604                         <si:coverageProbability>0.95</si:coverageProbability>
605                     </si:expandedUnc>
606                 </si:real>
607             </dcc:quantity>
608             <dcc:quantity>
609                 <si:real>
610                     <si:value>0.0302</si:value>
611                     <si:unit>\one</si:unit>
612                     <si:expandedUnc>
613                         <si:uncertainty>0.0025</si:uncertainty>
614                         <si:coverageFactor>2</si:coverageFactor>
615                         <si:coverageProbability>0.95</si:coverageProbability>
616                     </si:expandedUnc>
617                 </si:real>
618             </dcc:quantity>

```

```

619         <dcc:quantity>
620             <si:real>
621                 <si:value>0.0265</si:value>
622                 <si:unit>\one</si:unit>
623                 <si:expandedUnc>
624                     <si:uncertainty>0.0025</si:uncertainty>
625                     <si:coverageFactor>2</si:coverageFactor>
626                     <si:coverageProbability>0.95</si:coverageProbability>
627                 </si:expandedUnc>
628             </si:real>
629         </dcc:quantity>
630     <dcc:quantity>
631         <si:real>
632             <si:value>0.0217</si:value>
633             <si:unit>\one</si:unit>
634             <si:expandedUnc>
635                 <si:uncertainty>0.0025</si:uncertainty>
636                 <si:coverageFactor>2</si:coverageFactor>
637                 <si:coverageProbability>0.95</si:coverageProbability>
638             </si:expandedUnc>
639         </si:real>
640     </dcc:quantity>
641 <dcc:quantity>
642     <si:real>
643         <si:value>0.0174</si:value>
644         <si:unit>\one</si:unit>
645         <si:expandedUnc>
646             <si:uncertainty>0.0024</si:uncertainty>
647             <si:coverageFactor>2</si:coverageFactor>
648             <si:coverageProbability>0.95</si:coverageProbability>
649         </si:expandedUnc>
650     </si:real>
651 </dcc:quantity>
652 <dcc:quantity>
653     <si:real>
654         <si:value>0.0118</si:value>
655         <si:unit>\one</si:unit>
656         <si:expandedUnc>
657             <si:uncertainty>0.0024</si:uncertainty>
658             <si:coverageFactor>2</si:coverageFactor>
659             <si:coverageProbability>0.95</si:coverageProbability>
660         </si:expandedUnc>
661     </si:real>
662 </dcc:quantity>
663 <dcc:quantity>
664     <si:real>
665         <si:value>0.0077</si:value>
666         <si:unit>\one</si:unit>
667         <si:expandedUnc>
668             <si:uncertainty>0.0024</si:uncertainty>
669             <si:coverageFactor>2</si:coverageFactor>
670             <si:coverageProbability>0.95</si:coverageProbability>
671         </si:expandedUnc>
672     </si:real>
673 </dcc:quantity>
674 <dcc:quantity>
675     <si:real>
676         <si:value>0.0059</si:value>
677         <si:unit>\one</si:unit>
678         <si:expandedUnc>
679             <si:uncertainty>0.0016</si:uncertainty>
680             <si:coverageFactor>2</si:coverageFactor>
681             <si:coverageProbability>0.95</si:coverageProbability>
682         </si:expandedUnc>
683     </si:real>
684 </dcc:quantity>
685 </dcc:list>
686 </dcc:data>
687 </dcc:result>
688 <dcc:result>
689     <dcc:name>
690         <dcc:content lang="en">nitrogen, static expansion method</dcc:content>

```

```

691     </dcc:name>
692     <dcc:description>
693         <dcc:content lang="en">Name: correction factor, Quantity: Correction
694     </dcc:description>
695     <dcc:data>
696         <dcc:list>
697             <dcc:quantity>
698                 <si:real>
699                     <si:value>0.9621</si:value>
700                     <si:unit>\one</si:unit>
701                     <si:expandedUnc>
702                         <si:uncertainty>0.0030</si:uncertainty>
703                         <si:coverageFactor>2</si:coverageFactor>
704                         <si:coverageProbability>0.95</si:coverageProbability>
705                     </si:expandedUnc>
706                 </si:real>
707             </dcc:quantity>
708             <dcc:quantity>
709                 <si:real>
710                     <si:value>0.9614</si:value>
711                     <si:unit>\one</si:unit>
712                     <si:expandedUnc>
713                         <si:uncertainty>0.0028</si:uncertainty>
714                         <si:coverageFactor>2</si:coverageFactor>
715                         <si:coverageProbability>0.95</si:coverageProbability>
716                     </si:expandedUnc>
717                 </si:real>
718             </dcc:quantity>
719             <dcc:quantity>
720                 <si:real>
721                     <si:value>0.9639</si:value>
722                     <si:unit>\one</si:unit>
723                     <si:expandedUnc>
724                         <si:uncertainty>0.0025</si:uncertainty>
725                         <si:coverageFactor>2</si:coverageFactor>
726                         <si:coverageProbability>0.95</si:coverageProbability>
727                     </si:expandedUnc>
728                 </si:real>
729             </dcc:quantity>
730             <dcc:quantity>
731                 <si:real>
732                     <si:value>0.9665</si:value>
733                     <si:unit>\one</si:unit>
734                     <si:expandedUnc>
735                         <si:uncertainty>0.0025</si:uncertainty>
736                         <si:coverageFactor>2</si:coverageFactor>
737                         <si:coverageProbability>0.95</si:coverageProbability>
738                     </si:expandedUnc>
739                 </si:real>
740             </dcc:quantity>
741             <dcc:quantity>
742                 <si:real>
743                     <si:value>0.9707</si:value>
744                     <si:unit>\one</si:unit>
745                     <si:expandedUnc>
746                         <si:uncertainty>0.0024</si:uncertainty>
747                         <si:coverageFactor>2</si:coverageFactor>
748                         <si:coverageProbability>0.95</si:coverageProbability>
749                     </si:expandedUnc>
750                 </si:real>
751             </dcc:quantity>
752             <dcc:quantity>
753                 <si:real>
754                     <si:value>0.9742</si:value>
755                     <si:unit>\one</si:unit>
756                     <si:expandedUnc>
757                         <si:uncertainty>0.0024</si:uncertainty>
758                         <si:coverageFactor>2</si:coverageFactor>
759                         <si:coverageProbability>0.95</si:coverageProbability>
760                     </si:expandedUnc>
761                 </si:real>

```

```

762         </dcc:quantity>
763     <dcc:quantity>
764         <si:real>
765             <si:value>0.9788</si:value>
766             <si:unit>\one</si:unit>
767             <si:expandedUnc>
768                 <si:uncertainty>0.0024</si:uncertainty>
769                 <si:coverageFactor>2</si:coverageFactor>
770                 <si:coverageProbability>0.95</si:coverageProbability>
771             </si:expandedUnc>
772         </si:real>
773     </dcc:quantity>
774 <dcc:quantity>
775     <si:real>
776         <si:value>0.9829</si:value>
777         <si:unit>\one</si:unit>
778         <si:expandedUnc>
779             <si:uncertainty>0.0024</si:uncertainty>
780             <si:coverageFactor>2</si:coverageFactor>
781             <si:coverageProbability>0.95</si:coverageProbability>
782         </si:expandedUnc>
783     </si:real>
784 </dcc:quantity>
785 <dcc:quantity>
786     <si:real>
787         <si:value>0.9883</si:value>
788         <si:unit>\one</si:unit>
789         <si:expandedUnc>
790             <si:uncertainty>0.0023</si:uncertainty>
791             <si:coverageFactor>2</si:coverageFactor>
792             <si:coverageProbability>0.95</si:coverageProbability>
793         </si:expandedUnc>
794     </si:real>
795 </dcc:quantity>
796 <dcc:quantity>
797     <si:real>
798         <si:value>0.9924</si:value>
799         <si:unit>\one</si:unit>
800         <si:expandedUnc>
801             <si:uncertainty>0.0023</si:uncertainty>
802             <si:coverageFactor>2</si:coverageFactor>
803             <si:coverageProbability>0.95</si:coverageProbability>
804         </si:expandedUnc>
805     </si:real>
806 </dcc:quantity>
807 <dcc:quantity>
808     <si:real>
809         <si:value>0.9941</si:value>
810         <si:unit>\one</si:unit>
811         <si:expandedUnc>
812             <si:uncertainty>0.0016</si:uncertainty>
813             <si:coverageFactor>2</si:coverageFactor>
814             <si:coverageProbability>0.95</si:coverageProbability>
815         </si:expandedUnc>
816     </si:real>
817 </dcc:quantity>
818 </dcc:list>
819 </dcc:data>
820 </dcc:result>
821 </dcc:results>
822 </dcc:measurementResult>
823 </dcc:measurementResults>
824 </dcc:digitalCalibrationCertificate>
825

```