

# ISO 24365:2022-08 (E)

## Radiators and convectors - Methods and rating for determining the heat output

---

Contents	Page
Foreword .....	v
Introduction .....	vi
1 Scope .....	1
2 Normative references .....	1
3 Terms, definitions, symbols and units .....	1
3.1 Terms and definitions .....	1
3.2 Symbols and units of measurement .....	4
4 Selection of heating appliances to be tested .....	5
4.1 Classification .....	5
4.2 Selection of models to be tested for determining the thermal outputs of a type .....	6
4.2.1 Selection of models to be tested when the variable characteristic dimension is the overall height and the cross-section of the variable part is constant .....	6
4.2.2 Selection of models to be tested when the variable characteristic dimension for the type is other than the overall height .....	7
4.3 Testing samples submission and identification .....	8
4.4 Supplementary test .....	11
5 Laboratory equipment and test methods .....	11
5.1 Principle .....	11
5.2 Apparatus .....	11
5.2.1 Test system .....	11
5.2.2 Reference test installation .....	11
5.2.3 Master radiators .....	14
5.2.4 Verification of test installation repeatability and reproducibility .....	18
5.2.5 Accuracy of measuring instruments and devices .....	23
5.2.6 Calibration of measuring instruments .....	24
5.3 Preparation for thermal output test .....	24
5.4 Test methods .....	24
5.4.1 General .....	24
5.4.2 Weighing method .....	24
5.4.3 Electric method .....	25
5.4.4 Measurements and calculations .....	25
5.4.5 Determination of the characteristic equation .....	28
5.5 Presentation of results .....	29
5.5.1 Standard thermal output of a model .....	29
5.5.2 Determination of the catalogue outputs of a type made at variable water flow rate .....	30
6 Test report .....	30
Annex A (normative) Master radiators dimensional verification .....	33
Annex B (informative) Determination of pressure drop .....	38
Annex C (normative) Least squares regression for a model .....	43
Annex D (normative) Analysis of test results by the method of least squares multiple regression ....	44

<b>Annex E (normative) Specimen of the test report .....</b>	<b>46</b>
<b>Annex F (informative) Apparatus and method for checking the bulk temperature measuring devices .....</b>	<b>49</b>
<b>Annex G (informative) Examples of typical appliances according to Table 4 .....</b>	<b>51</b>
<b>Annex H (normative) Determination of the M values of the master radiators primary set .....</b>	<b>61</b>
<b>Annex I (normative) Calculation method for determining the energy calculation parameters .....</b>	<b>62</b>
<b>Bibliography .....</b>	<b>64</b>