

DIN EN ISO 24194:2025-01 (E)

Solar energy - Collector fields - Check of performance (ISO 24194:2022 + Amd 1:2024) (includes Amendment :2024)

Contents		Page
	European foreword	3
	☐_{A1} European foreword to Amendment 1 ☐_{A1}	4
	Foreword	5
	☐_{A1} Foreword to Amendment 1 ☐_{A1}	6
	Introduction	7
1	Scope	8
2	Normative references	8
3	Terms and definitions	8
4	Symbols	8
5	Procedure for checking the power performance of solar thermal collector fields	12
5.1	Stating an estimate for the thermal power output of a collector field.....	12
5.2	Calculating power output.....	12
5.2.1	General.....	12
5.2.2	Non-concentrating collectors — Formula (1).....	13
5.2.3	Non- or low-focussing collectors — Formula (2).....	14
5.2.4	Focussing collectors with high concentration ratio — Formula (3).....	14
5.3	Stating a performance estimate.....	14
5.4	Restrictions on operating conditions.....	14
5.5	Shadows.....	15
5.5.1	Shadows on fixed collectors in rows.....	15
5.5.2	Shadows on one-axis tracking collectors in row.....	16
5.6	Collector incidence angle.....	18
5.7	Example of setting up an equation for calculating performance estimate.....	18
5.8	Determination of potential valid periods.....	19
5.9	Checking collector field power performance.....	20
6	Procedure for checking the daily yield of solar thermal collector fields	21
6.1	Stating an estimate for the daily yield of a collector field.....	21
6.2	Calculating daily energy yield.....	21
6.2.1	General.....	21
6.2.2	Non-tracking and non-concentrating collectors — Formula (20).....	22
6.3	Stating a performance estimate.....	23
6.4	Restrictions on operating conditions.....	23
6.5	Shadows.....	23
6.6	Collector incidence angle.....	23
6.7	Example of setting up an equation for calculating performance estimate.....	24
6.8	Determination of potential valid periods.....	25
6.9	Checking collector field daily yield performance.....	25
7	Measurements needed	25
7.1	General.....	25
7.2	Requirements on measurements and sensors.....	28
7.2.1	Accuracy.....	28
7.2.2	Time.....	28
7.2.3	Solar radiation measurement.....	29
7.2.4	Temperature measurements.....	30
7.2.5	Flow rate measurement.....	31
7.2.6	Power measurement/calculation.....	31
7.2.7	Measurement of wind speed.....	31
7.3	Valid data records.....	31
	Annex A (informative) Recommended reporting format — Power method	33
	Annex B (informative) Recommended reporting format — Daily yield method	36
	Bibliography	37