

ISO 12759-6:2024-05 (E)

Fans - Efficiency classification for fans - Part 6: Calculation of the fan energy index

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Normative references	1
3	Terms, definitions and symbols	1
3.1	Terms and definitions	2
3.1.1	General terms	2
3.1.2	Impeller types	4
3.1.3	Fan types	5
3.2	Symbols	7
4	General	7
4.1	Minimum testable configuration	7
4.2	FEI pressure basis	8
4.3	Appurtenances	8
4.4	Fans embedded in other equipment	9
5	Fan energy index	9
5.1	General	9
5.2	Reference electrical input power	9
5.2.1	General	9
5.2.2	Reference shaft power	10
5.2.3	Reference transmission efficiency	11
5.2.4	Reference motor efficiency	11
5.2.5	Reference motor controller efficiency	12
5.3	Actual fan electrical input power	12
5.3.1	General	12
5.3.2	Measurement of fan electrical input power	13
5.3.3	Fan electrical input power calculation using ISO 12759-2	14
5.3.4	Combined fan shaft power with tested motor or motor and controller	14
5.3.5	Fan electrical input power calculation for fans with motors of unknown efficiency	16
6	Use of FEI	17
6.1	Requirements for use of FEI	17
6.2	Published FEI values	17
Annex A (normative) Fan types, test configurations and FEI pressure basis		18
Annex B (informative) Usage of FEI		21
Annex C (informative) Fan arrays		27
Annex D (informative) Practical issues with embedded fans		29
Annex E (informative) Electrical power measurement -- Calculation to other speeds and densities		30
Annex F (informative) Basis for the reference electrical input power calculations		36
Bibliography		40