HYDRAULIC EFFICIENCY

EU 547/2012 REGULATION - MEI

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GENERAL INFORMATION

With the aim of defining a comparable performance threshold value among all water pumps present on the market, an index has been created which considers the size of the pump, its specific speed and rotation speed: the MEI (Minimum Efficiency Index).
The regulation applies to centrifugal pumps for pumping clean water included in these product categories:
- Pumps with axial intake with support (ESOB - End Suction Own Bearings)
- Pumps with monobloc horizontal axial intake (ESCC - End Suction Close Coupled)
- Pumps with monobloc in-line axial intake (ESCCI End Suction Close Coupled Inline)
- Multistage vertical pumps (MS-V - Vertical multistage)
- Multistage submerged pumps (MSS - Submersible multistage)

MEI represents a dimensionless indicator for hydraulic performance and is a measurement of the sizing of the pump with respect to its performance.
The higher the MEI value, the better the sizing of the pump with respect to its performance and the lower the yearly energy consumption due to use of the pump. The upper limit of the MEI values is theoretically open, and depends only on physical and technological limits.

The minimum efficiency index (MEI) is based on the maximum diameter of the impeller. Multistage submerged water pumps must undergo tests in a version with 9 stages.

The reference value for the most efficient water pumps is MEI ≥ 0.70.

The efficiency of a pump with a trimmed impeller is usually lower than that of a pump with the full impeller diameter. The trimming of the impeller adapts the pump to a fixed work point, with a consequent lower energy consumption.

The operation of this water pump with variable operating points may be more efficient and economic if controlled, for example, by means of a variable speed motor which adapts pump operation to the system.

You can find information on reference efficiency at the address: **www.dabpumps.com** or contact our sales network.
The efficiency graphs for MEI=0.7 and MEI=0.4 for the different types of pumps are available on the site: **www.europump.org/efficiencycharts**

		PUMP MODEL	IMPELLER	MEI	η PL	η BEP	η OL
DN 40	2p	**KLP 40/1800 T**	Full	≥ 0,50	61,1	64,2	63,6
		KLP 40/1800 M	Full		61,0	63,9	63,5
		KLP 40/1600 T	Turned		58,1	61,0	60,3
		KLP 40/1200 T	Turned		56,6	59,6	58,5
		KLP 40/1200 M	Turned		56,6	59,5	58,5
		KLP 40/900 T	Turned		52,9	54,9	53,7
		KLP 40/900 M	Turned		51,3	54,6	53,3
		KLP 40/600 T	Turned		51,9	54,0	53,0
		KLP 40/600 M	Turned		48,2	51,2	50,6
	4p	**KLM 40/400 T - M**	Full	not applicable	-	-	-
		KLM 40/300 T - M	Turned		-	-	-

		PUMP MODEL	IMPELLER	MEI	η PL	η BEP	η OL
DN 50	2p	**KLP 50/2000 T**	Full	≥ 0,50	66,9	69,4	68,7
		KLP 50/2000 M	Full		66,7	69,1	68,4
		KLP 50/1600 T	Turned		65,7	68,2	67,3
		KLP 50/1600 M	Turned		65,9	68,3	67,4
		KLP 50/1200 T	Turned		63,2	66,9	65,2
		KLP 50/1200 M	Full		62,8	65,4	64,8
		KLP 50/900 T	Turned		62,2	64,9	64,2
		KLP 50/900 M	Turned		58,8	61,4	60,8
	4p	**KLM 50/600 T**	Full	≥ 0,60	60,6	64,0	63,5
		KLM 50/600 M	Full		57,6	61,6	61,1
		KLM 50/300 T	Turned		45,4	48,7	48,1
		KLM 50/300 M	Turned		42,4	45,7	45,1

		PUMP MODEL	IMPELLER	MEI	η PL	η BEP	η OL
DN 65	2p	**KLP 65/2000 T**	Full	≥ 0,50	68,50	72,30	71,50
		KLP 65/1600 T	Turned		68,0	71,0	69,6
		KLP 65/1200 T	Turned		64,5	69,2	68,1
		KLP 65/900 T	Turned		61,4	65,4	64,6
	4p	**KLM 65/600 T**	Full	≥ 0,60	65,9	68,6	67,9
		KLM 65/300 T	Turned		56,2	59,7	58,7

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		PUMP MODEL	IMPELLER	MEI	η_{PL}	η_{BEP}	η_{OL}
DN 80	2p	**KLP 80/2000 T**	Full	≥ 0,60	72,9	76,4	75,9
		KLP 80/1600 T	Turned		69,4	73,4	72,7
		KLP 80/1200 T	Turned		66,6	70,6	69,2
		KLP 80/900 T	Turned		65,5	69,2	68,9
	4p	**KLM 80/600 T**	Full	≥ 0,60	70,4	73,1	72,6
		KLM 80/300 T	Turned		66,3	67,9	66,3

		PUMP MODEL	IMPELLER	MEI	η_{PL}	η_{BEP}	η_{OL}
DN 65	2p	**CP-G 65- 9250 T**	Full	≥ 0,60	64,5	67,4	66,6
		CP-G 65- 7350 T	Turned		64,1	67,0	66,5
		CP-G 65- 6750 T	Turned		63,8	66,8	66,2
		CP-G 65- 6150 T	Turned		63,2	66,5	65,8
		CP-G 65- 5500 T	Turned		62,9	66,2	65,4
		CP-G 65- 4700 T	Turned		56,9	59,6	59,1
		CP-G 65- 4100 T	Full	≥ 0,60	67,9	71,2	70,7
		CP-G 65- 3400 T	Turned		66,6	71,0	70,0
		CP-G 65- 2640 T	Turned		66,3	69,5	69,5
		CP-G 65- 2280 T	Turned		65,6	68,5	68,5
		CP-G 65- 1900 T	Turned		64,6	67,8	67,5
		CP-G 65- 1470 T	Turned		63,5	67,3	66,7
	4p	**CM-G 65- 2380 T**	Full	≥ 0,60	70,6	71,9	71,7
		CM-G 65- 1680 T	Turned		68,5	70,6	70,2
		CM-G 65- 1530 T	Turned		60,7	63,1	62,6
		CM-G 65- 1200 T	Turned		58,8	61,5	61,0
		CM-G 65- 1080 T	Turned		58,0	61,5	60,4
		CM-G 65- 920 T	Full	≥ 0,60	68,8	72,2	71,5
		CM-G 65- 760 T	Turned		64,3	68,5	68,0
		CM-G 65- 660 T	Turned		64,0	67,0	66,0
		CM-G 65- 540 T	Turned		61,5	65,3	64,6
		CM-G 65- 420 T	Turned		56,4	60,6	59,8

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		PUMP MODEL	IMPELLER	MEI	η PL	η BEP	η OL
DN 80	2p	CP-G 80- 10200 T	Full	≥ 0,40	67,4	71,1	70,4
		CP-G 80- 9600 T	Full	≥ 0,40	67,2	71,8	70,7
		CP-G 80- 8600 T	Turned		64,2	67,7	67,1
		CP-G 80- 6850 T	Full	≥ 0,40	71,3	74,4	73,6
		CP-G 80- 5650 T	Turned		70,5	73,4	72,9
		CP-G 80- 5150 T	Turned		69,3	72,5	71,3
		CP-G 80- 4000 T	Full	≥ 0,60	74,7	79,2	78,3
		CP-G 80- 3250 T	Turned		72,3	76,7	75,8
		CP-G 80- 2770 T	Turned		71,2	75,3	74,5
		CP-G 80- 2400 T	Full	≥ 0,60	75,4	78,8	78,5
		CP-G 80- 2050 T	Turned		73,6	78,2	76,9
		CP-G 80- 1700 T	Turned		72,8	78,1	76,9
		CP-G 80- 1400 T	Turned		57,0	61,2	60,4
	4p	CM-G 80- 3420 T	Full	≥ 0,60	68,5	71,6	71,0
		CM-G 80- 2700 T	Turned		65,9	70,6	69,8
		CM-G 80- 2410 T	Full	≥ 0,40	65,8	69,4	68,8
		CM-G 80- 1700 T	Full	≥ 0,60	82,0	83,5	83,3
		CM-G 80- 1530 T	Turned		75,8	78,6	77,9
		CM-G 80- 1050 T	Full	≥ 0,60	75,2	79,0	78,3
		CM-G 80- 890 T	Turned		73,0	76,8	76,1
		CM-G 80- 740 T	Turned		61,4	65,8	65,0
		CM-G 80- 650 T	Full	≥ 0,60	72,9	75,7	75,1
		CM-G 80- 550 T	Turned		69,4	73,5	72,7

		PUMP MODEL	IMPELLER	MEI	η PL	η BEP	η OL
DN 100	2p	CP-G 100- 8300 T	Full	≥ 0,40	72,6	76,6	75,5
		CP-G 100- 6300 T	Full	≥ 0,40	72,1	75,9	74,9
		CP-G 100- 5600 T	Turned		69,5	72,8	72,3
		CP-G 100- 4800 T	Turned		68,5	70,0	69,1
		CP-G 100- 3850 T	Full	≥ 0,60	75,7	82,5	81,3
		CP-G 100- 3550 T	Turned		75,0	80,6	79,5
		CP-G 100- 3050 T	Turned		71,7	76,9	76,1
		CP-G 100- 2400 T	Turned		66,1	71,8	70,9
		CP-G 100- 2350 T	Full	≥ 0,50	71,2	76,3	75,5
		CP-G 100- 1950 T	Turned		68,7	73,2	72,4
		CP-G 100- 1600 T	Turned		64,6	67,1	66,5
	4p	CM-G 100- 4100 T	Full	≥ 0,40	70,8	75,1	74,1
		CM-G 100- 3680 T	Turned		69,2	74,0	73,2
		CM-G 100- 3290 T	Turned		68,0	73,0	72,5
		CM-G 100- 2550 T	Full	≥ 0,40	72,5	76,1	75,2
		CM-G 100- 2050 T	Turned		70,7	75,0	74,1
		CM-G 100- 1650 T	Full	≥ 0,60	71,7	76,3	75,5
		CM-G 100- 1320 T	Turned		69,0	74,3	72,5
		CM-G 100- 1020 T	Full	≥ 0,60	81,2	85,0	84,3
		CM-G 100- 865 T	Turned		71,5	73,9	73,9
		CM-G 100- 660 T	Turned		68,2	74,6	73,5
		CM-G 100- 650 T	Full	≥ 0,60	72,8	78,8	77,8
		CM-G 100- 510 T	Turned		65,1	70,9	69,9

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		PUMP MODEL	IMPELLER	MEI	η_{PL}	η_{BEP}	η_{OL}
DN 125	2p	**CP-G 125- 5800 T**	Full	≥ 0,50	76,5	81,6	80,2
		CP-G 125- 5300 T	Turned		75,2	78,7	77,9
		CP-G 125- 4750 T	Turned		72,1	76,2	75,3
	4p	**CM-G 125- 4022 T**	Full	≥ 0,40	70,7	74,2	73,7
		CM-G 125- 3600 T	Turned		71,5	73,3	72,4
		CM-G 125- 3200 T	Turned		70,8	73,5	73,1
		CM-G 125- 2550 T	Full	≥ 0,40	69,9	73,2	72,2
		CM-G 125- 2100 T	Turned		66,8	69,4	69,1
		CM-G 125- 1560 T	Full	≥ 0,60	78,5	85,0	84,0
		CM-G 125- 1270 T	Turned		73,3	78,0	77,1
		CM-G 125- 1075 T	Turned		72,3	77,0	76,2

		PUMP MODEL	IMPELLER	MEI	η_{PL}	η_{BEP}	η_{OL}
DN 150	4p	**CM-G 150- 2405 T**	Full	≥ 0,60	79,7	85,9	84,8
		CM-G 150- 2200 T	Turned		76,3	81,7	80,7
		CM-G 150- 1950 T	Turned		75,9	80,6	79,7
		CM-G 150- 1600 T	Turned		72,2	77,1	76,3
		CM-G 150- 1322 T	Turned		70,8	74,6	73,3
		CM-G 150- 955 T	Turned		63,7	66,9	66,4

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