

HYDRAULIC EFFICIENCY

EU 547/2012 REGULATION - MEI

GENERAL INFORMATION

The MEI index (Minimum Efficiency Index) was issued with the objective of defining a performance threshold value applicable to all the water pumps found on the market. The MEI index takes into account the size of the pump, its specific speed, and its speed of rotation.

The regulation applies to centrifugal pumps used for pumping clean waters included in the following categories:

- Axial suction pumps with support (ESOB)
- Horizontal monobloc axial suction pumps (ESCC)
- In-line monobloc axial suction pumps (ESCCI)
- Multistage vertical pumps (MS-V)
- Multistage submerged pumps (MSS)

MEI is a dimensionless indicator for hydraulic performance, and a measure of the quality of the sizing of the pump in relation to the performance.

The higher the MEI value, the better is the sizing of the pump in relation to the performance, and the lower is the annual energy consumption due to the use of the pump. In theory, the upper limit of the MEI values is open, and only depends on physical and technological limitations.

The minimum efficiency index (MEI) is based on the maximum diameter of the impeller. Multistage vertical water pumps must be tested in the 3-stage version.

The value of reference for the more efficient water pumps is $MEI \geq 0,70$.

The efficiency of a pump with turned impeller is generally lower to that of a pump with full impeller diameter. The turning of the impeller adapts the pump to a fixed point of operation, resulting in lower energy consumption.

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

The information on the efficiency of reference can be found at the address: www.dabpumps.com. In alternative contact your local sales representatives.

The $MEI=0,7$ and $MEI=0,4$ efficiency charts for the different types of pumps can be found at the website: www.europump.org/efficiencycharts

PUMP MODEL	IMPELLER	MEI
K 20/41	-	not applicable
K 30/70	-	
K 36/100	Full	$\geq 0,70$
K 30/100	Turned	
K 12/200	Full	$\geq 0,70$
K 55/200 T	Full	$\geq 0,70$
K 36/200 T	Turned	
K 40/200 T	Turned	
K 14/400	Full	$\geq 0,40$
K 28/500	Full	$\geq 0,70$
K 11/500 T	Turned	
K 18/500 T	Turned	
K 50/400 T	Full	$\geq 0,50$
K 40/400 T	Turned	
K 50/800 T	Full	$\geq 0,60$
K 30/800 T	Turned	
K 40/800 T	Turned	
K 35/1200 T	Full	$\geq 0,60$
K 20/1200 T	Turned	
K 25/1200 T	Turned	

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PUMP MODEL	IMPELLER	MEI
NKM-G 32-125.1/140 T 0,25	Full	≥ 0,40
NKP-G 32-125.1/140 T 2,2	Full	≥ 0,40
NKP-G 32-125.1/102 T 0,75	Turned	
NKP-G 32-125.1/115 T 1,1	Turned	
NKP-G 32-125.1/125 T 1,5	Turned	
NKM-G 32-160.1/169 T 0,37	Full	≥ 0,40
NKP-G 32-160.1/177	Full	≥ 0,40
NKP-G 32-160.1/155 T 2,2	Turned	
NKP-G 32-160.1/166 T 3	Turned	
NKM-G 32-200.1/200 T 0,55	Full	≥ 0,40
NKP-G 32-200.1/205 T 5,5	Full	≥ 0,40
NKP-G 32-200.1/188 T 4	Turned	
NKM-G 32-125/142 T 0,37	Full	≥ 0,40
NKP-G 32-125/142 T 3	Full	≥ 0,40
NKP-G 32-125/110 T 1,1	Turned	
NKP-G 32-125/120 T 1,5	Turned	
NKP-G 32-125/130 T 2,2	Turned	
NKM-G 32-160/169 T 0,55	Full	≥ 0,40
NKP-G 32-160/177 T 5,5	Full	≥ 0,40
NKP-G 32-160/151 T 3	Turned	
NKP-G 32-160/163 T 4	Turned	
NKM-G 32-200/219 T 1,1	Full	≥ 0,60
NKM-G 32-200/200 T 0,75	Turned	
NKP-G 32-200/210 T 7,5	Full	≥ 0,50
NKP-G 32-200/190 T 5,5	Turned	
NKM-G 40-125/142 T 0,55	Full	≥ 0,40
NKM-G 40-125/115 T 0,25	Turned	
NKM-G 40-125/130 T 0,37	Turned	
NKP-G 40-125/139 1 A T 4	Full	≥ 0,40
NKP-G 40-125/107 7 A T 1,5	Turned	
NKP-G 40-125/120 5 A T 2,2	Turned	
NKP-G 40-125/130 3 A T 3	Turned	
NKM-G 40-160/166 T 0,75	Full	≥ 0,40
NKM-G 40-160/153 T 0,55	Turned	
NKP-G 40-160/172 T 7,5	Full	≥ 0,50
NKP-G 40-160/158 T 5,5	Turned	
NKM-G 40-200/219 T 1,5	Full	≥ 0,60
NKM-G 40-200/200 T 1,1	Turned	
NKP-G 40-200/210 T 11	Full	≥ 0,40

PUMP MODEL	IMPELLER	MEI
NKM-G 40-250/260 T 3	Full	≥ 0,60
NKM-G 40-250/245 T 2,2	Turned	
NKP-G 40-250/260 T 22	Full	≥ 0,50
NKP-G 40-250/230 T 15	Turned	
NKP-G 40-250/245 T 18,5	Turned	
NKM-G 50-125/141 T 0,75	Full	≥ 0,40
NKM-G 50-125/130 T 0,55	Turned	
NKP-G 50-125/144 T 6,9	Full	≥ 0,40
NKP-G 50-125/115 T 3	Turned	
NKP-G 50-125/125 T 4	Turned	
NKP-G 50-125/135 T 5,5	Turned	
NKM-G 50-160/177 T 1,5	Full	≥ 0,60
NKM-G 50-160/161 T 1,1	Turned	
NKP-G 50-160/169 T 11	Full	≥ 0,40
NKP-G 50-160/153 T 7,5	Turned	
NKM-G 50-200/219 T 3	Full	≥ 0,60
NKM-G 50-200/210 T 2,2	Turned	
NKP-G 50-200/219 T 22	Full	≥ 0,50
NKP-G 50-200/200 T 15	Turned	
NKP-G 50-200/210 T 18,5	Turned	
NKM-G 50-250/263 T 4	Full	≥ 0,60
NKP-G 50-250/257 T 30	Full	≥ 0,40
NKP-G 50-250/230 T 22	Turned	
NKM-G 65-125/144 T 1,1	Full	≥ 0,40
NKM-G 65-125/130 T 0,75	Turned	
NKP-G 65-125/137 T 7,5	Full	≥ 0,40
NKP-G 65-125/120 T 4	Turned	
NKP-G 65-125/127 T 5,5	Turned	
NKM-G 65-160/177 T 2,2	Full	≥ 0,60
NKM-G 65-160/153 T 1,1	Turned	
NKM-G 65-160/165 T 1,5	Turned	
NKP-G 65-160/173 T 15	Full	≥ 0,50
NKP-G 65-160/157 T 11	Turned	
NKM-G 65-200/219 T 4	Full	≥ 0,60
NKM-G 65-200/210 T 3	Turned	
NKP-G 65-200/219 T 30	Full	≥ 0,70
NKP-G 65-200/190 T 18,5	Turned	
NKP-G 65-200/200 T 22	Turned	
NKM-G 65-250/263 T 5,5	Full	≥ 0,50
NKM-G 65-315/309 T 11	Full	≥ 0,40
NKM-G 65-315/279 T 7,5	Turned	

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PUMP MODEL	IMPELLER	MEI
NKM-G 80-160/177 T 3	Full	≥ 0,40
NKM-G 80-160/153-136 T 1,5	Turned	
NKM-G 80-160/163 T 2,2	Turned	
NKP-G 80-160/169 T 22	Full	≥ 0,40
NKP-G 80-160/147-127 T 11	Turned	
NKP-G 80-160/153 T 15	Turned	
NKP-G 80-160/163 T 18,5	Turned	≥ 0,40
NKM-G 80-200/222 T 5,5	Full	
NKM-G 80-200/200 T 4	Turned	≥ 0,40
NKP-G 80-200/190 T 30	Full	≥ 0,40
NKM-G 80-250/270 T 11	Full	≥ 0,40
NKM-G 80-250/240 T 7,5	Turned	
NKM-G 80-315/334 T 22	Full	≥ 0,50
NKM-G 80-315/305 T 15	Turned	
NKM-G 80-315/320 T 18,5	Turned	
NKM-G 100-200/214 T 7,5	Full	≥ 0,40
NKM-G 100-200/200 T 5,5	Turned	
NKM-G 100-250/270 T 15	Full	≥ 0,40
NKM-G 100-250/250 T 11	Turned	
NKM-G 100-315/316 T 22	Full	≥ 0,40
NKM-G 100-315/300 T 18,5	Turned	
NKM-G 125-250/266 T 22	Full	≥ 0,40
NKM-G 125-250/243 T 15	Turned	
NKM-G 125-250/256 T 18,5	Turned	
NKM-G 150-200/218 T 11	-	not applicable

PUMP MODEL	IMPELLER	MEI
KDN 32-125.1/140 4P	Full	≥ 0,40
KDN 32-125.1/105 4P	Turned	
KDN 32-125.1/110 4P	Turned	
KDN 32-125.1/115 4P	Turned	
KDN 32-125.1/120 4P	Turned	
KDN 32-125.1/125 4P	Turned	
KDN 32-125.1/130 4P	Turned	≥ 0,40
KDN 32-125.1/135 4P	Turned	
KDN 32-125.1/140 2P	Full	
KDN 32-125.1/105 2P	Turned	
KDN 32-125.1/110 2P	Turned	
KDN 32-125.1/115 2P	Turned	
KDN 32-125.1/120 2P	Turned	≥ 0,40
KDN 32-125.1/125 2P	Turned	
KDN 32-125.1/130 2P	Turned	
KDN 32-125.1/135 2P	Turned	
KDN 32-160.1/177 4P	Full	
KDN 32-160.1/137 4P	Turned	
KDN 32-160.1/145 4P	Turned	≥ 0,40
KDN 32-160.1/153 4P	Turned	
KDN 32-160.1/161 4P	Turned	
KDN 32-160.1/169 4P	Turned	
KDN 32-160.1/177 2P	Full	
KDN 32-160.1/137 2P	Turned	
KDN 32-160.1/145 2P	Turned	≥ 0,40
KDN 32-160.1/153 2P	Turned	
KDN 32-160.1/161 2P	Turned	
KDN 32-160.1/169 2P	Turned	
KDN 32-200.1/207 4P	Full	
KDN 32-200.1/170 4P	Turned	
KDN 32-200.1/180 4P	Turned	≥ 0,50
KDN 32-200.1/190 4P	Turned	
KDN 32-200.1/200 4P	Turned	
KDN 32-200.1/207 2P	Full	≥ 0,40
KDN 32-200.1/170 2P	Turned	
KDN 32-200.1/180 2P	Turned	
KDN 32-200.1/190 2P	Turned	
KDN 32-200.1/200 2P	Turned	

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PUMP MODEL	IMPELLER	MEI
KDN 32-125/142 4P	Full	≥ 0,50
KDN 32-125/115 4P	Turned	
KDN 32-125/120 4P	Turned	
KDN 32-125/125 4P	Turned	
KDN 32-125/130 4P	Turned	
KDN 32-125/135 4P	Turned	
KDN 32-125/142 2P	Full	≥ 0,40
KDN 32-125/115 2P	Turned	
KDN 32-125/120 2P	Turned	
KDN 32-125/125 2P	Turned	
KDN 32-125/130 2P	Turned	
KDN 32-125/135 2P	Turned	
KDN 32-160/177 4P	Full	≥ 0,40
KDN 32-160/137 4P	Turned	
KDN 32-160/145 4P	Turned	
KDN 32-160/153 4P	Turned	
KDN 32-160/161 4P	Turned	
KDN 32-160/169 4P	Turned	
KDN 32-160/177 2P	Full	≥ 0,40
KDN 32-160/137 2P	Turned	
KDN 32-160/145 2P	Turned	
KDN 32-160/153 2P	Turned	
KDN 32-160/161 2P	Turned	
KDN 32-160/169 2P	Turned	
KDN 32-200/219 4P	Full	≥ 0,60
KDN 32-200/170 4P	Turned	
KDN 32-200/180 4P	Turned	
KDN 32-200/190 4P	Turned	
KDN 32-200/200 4P	Turned	
KDN 32-200/210 4P	Turned	
KDN 32-200/219 2P	Full	≥ 0,60
KDN 32-200/170 2P	Turned	
KDN 32-200/180 2P	Turned	
KDN 32-200/190 2P	Turned	
KDN 32-200/200 2P	Turned	
KDN 32-200/210 2P	Turned	

PUMP MODEL	IMPELLER	MEI
KDN 40-125/142 4P	Full	≥ 0,40
KDN 40-125/115 4P	Turned	
KDN 40-125/120 4P	Turned	
KDN 40-125/125 4P	Turned	
KDN 40-125/130 4P	Turned	
KDN 40-125/135 4P	Turned	
KDN 40-125/142 2P	Full	≥ 0,40
KDN 40-125/115 2P	Turned	
KDN 40-125/120 2P	Turned	
KDN 40-125/125 2P	Turned	
KDN 40-125/130 2P	Turned	
KDN 40-125/135 2P	Turned	
KDN 40-160/177 4P	Full	≥ 0,40
KDN 40-160/137 4P	Turned	
KDN 40-160/145 4P	Turned	
KDN 40-160/153 4P	Turned	
KDN 40-160/161 4P	Turned	
KDN 40-160/169 4P	Turned	
KDN 40-160/177 2P	Full	≥ 0,50
KDN 40-160/137 2P	Turned	
KDN 40-160/145 2P	Turned	
KDN 40-160/153 2P	Turned	
KDN 40-160/161 2P	Turned	
KDN 40-160/169 2P	Turned	
KDN 40-200/219 4P	Full	≥ 0,60
KDN 40-200/170 4P	Turned	
KDN 40-200/180 4P	Turned	
KDN 40-200/190 4P	Turned	
KDN 40-200/200 4P	Turned	
KDN 40-200/210 4P	Turned	
KDN 40-200/219 2P	Full	≥ 0,50
KDN 40-200/170 2P	Turned	
KDN 40-200/180 2P	Turned	
KDN 40-200/190 2P	Turned	
KDN 40-200/200 2P	Turned	
KDN 40-200/210 2P	Turned	

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PUMP MODEL	IMPELLER	MEI
KDN 40-250/260 4P	Full	≥ 0,40
KDN 40-250/220 4P	Turned	
KDN 40-250/230 4P	Turned	
KDN 40-250/240 4P	Turned	
KDN 40-250/250 4P	Turned	
KDN 40-250/260 2P	Full	≥ 0,40
KDN 40-250/220 2P	Turned	
KDN 40-250/230 2P	Turned	
KDN 40-250/240 2P	Turned	
KDN 40-250/250 2P	Turned	
KDN 50-125/144 4P	Full	≥ 0,40
KDN 50-125/115 4P	Turned	
KDN 50-125/120 4P	Turned	
KDN 50-125/125 4P	Turned	
KDN 50-125/130 4P	Turned	
KDN 50-125/135 4P	Turned	≥ 0,40
KDN 50-125/139 4P	Turned	
KDN 50-125/144 2P	Full	
KDN 50-125/115 2P	Turned	
KDN 50-125/120 2P	Turned	
KDN 50-125/125 2P	Turned	≥ 0,40
KDN 50-125/130 2P	Turned	
KDN 50-125/135 2P	Turned	
KDN 50-125/139 2P	Turned	
KDN 50-160/177 4P	Full	
KDN 50-160/137 4P	Turned	
KDN 50-160/145 4P	Turned	
KDN 50-160/153 4P	Turned	
KDN 50-160/161 4P	Turned	
KDN 50-160/169 4P	Turned	≥ 0,50
KDN 50-160/177 2P	Full	
KDN 50-160/137 2P	Turned	
KDN 50-160/145 2P	Turned	
KDN 50-160/153 2P	Turned	
KDN 50-160/161 2P	Turned	
KDN 50-160/169 2P	Turned	

PUMP MODEL	IMPELLER	MEI
KDN 50-200/219 4P	Full	≥ 0,60
KDN 50-200/170 4P	Turned	
KDN 50-200/180 4P	Turned	
KDN 50-200/190 4P	Turned	
KDN 50-200/200 4P	Turned	
KDN 50-200/210 4P	Turned	≥ 0,40
KDN 50-200/219 2P	Full	
KDN 50-200/170 2P	Turned	
KDN 50-200/180 2P	Turned	
KDN 50-200/190 2P	Turned	
KDN 50-200/200 2P	Turned	≥ 0,60
KDN 50-200/210 2P	Turned	
KDN 50-250/263 4P	Full	
KDN 50-250/220 4P	Turned	
KDN 50-250/230 4P	Turned	
KDN 50-250/240 4P	Turned	≥ 0,50
KDN 50-250/250 4P	Turned	
KDN 50-250/263 2P	Full	
KDN 50-250/220 2P	Turned	
KDN 50-250/230 2P	Turned	
KDN 50-250/240 2P	Turned	≥ 0,40
KDN 50-250/250 2P	Turned	
KDN 65-125/144 4P	Full	
KDN 65-125/120-110 4P	Turned	
KDN 65-125/120 4P	Turned	
KDN 65-125/125 4P	Turned	≥ 0,40
KDN 65-125/130 4P	Turned	
KDN 65-125/135 4P	Turned	
KDN 65-125/140 4P	Turned	
KDN 65-125/144 2P	Full	
KDN 65-125/120-110 2P	Turned	
KDN 65-125/120 2P	Turned	
KDN 65-125/125 2P	Turned	
KDN 65-125/130 2P	Turned	
KDN 65-125/135 2P	Turned	
KDN 65-125/140 2P	Turned	

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PUMP MODEL	IMPELLER	MEI
KDN 65-160/177 4P	Full	≥ 0,60
KDN 65-160/137 4P	Turned	
KDN 65-160/145 4P	Turned	
KDN 65-160/153 4P	Turned	
KDN 65-160/161 4P	Turned	
KDN 65-160/169 4P	Turned	
KDN 65-160/177 2P	Full	≥ 0,50
KDN 65-160/137 2P	Turned	
KDN 65-160/145 2P	Turned	
KDN 65-160/153 2P	Turned	
KDN 65-160/161 2P	Turned	
KDN 65-160/169 2P	Turned	
KDN 65-200/219 4P	Full	≥ 0,60
KDN 65-200/170 4P	Turned	
KDN 65-200/180 4P	Turned	
KDN 65-200/190 4P	Turned	
KDN 65-200/200 4P	Turned	
KDN 65-200/210 4P	Turned	
KDN 65-200/219 2P	Full	≥ 0,60
KDN 65-200/170 2P	Turned	
KDN 65-200/180 2P	Turned	
KDN 65-200/190 2P	Turned	
KDN 65-200/200 2P	Turned	
KDN 65-200/210 2P	Turned	
KDN 65-250/263 4P	Full	≥ 0,50
KDN 65-250/220 4P	Turned	
KDN 65-250/230 4P	Turned	
KDN 65-250/240 4P	Turned	
KDN 65-250/250 4P	Turned	
KDN 65-250/263 2P	Full	
KDN 65-250/220 2P	Turned	
KDN 65-250/230 2P	Turned	
KDN 65-250/240 2P	Turned	
KDN 65-250/250 2P	Turned	
KDN 65-250/263 2P	Full	≥ 0,50
KDN 65-250/220 2P	Turned	
KDN 65-250/230 2P	Turned	
KDN 65-250/240 2P	Turned	
KDN 65-250/250 2P	Turned	
KDN 65-250/263 2P	Full	

PUMP MODEL	IMPELLER	MEI
KDN 65-315/320 4P	Full	≥ 0,50
KDN 65-315/260 4P	Turned	
KDN 65-315/275 4P	Turned	
KDN 65-315/290 4P	Turned	
KDN 65-315/305 4P	Turned	
KDN 65-315/320 2P	Full	
KDN 65-315/260 2P	Turned	
KDN 65-315/275 2P	Turned	
KDN 65-315/290 2P	Turned	
KDN 65-315/305 2P	Turned	
KDN 80-160/177 4P	Full	≥ 0,50
KDN 80-160/147-127 4P	Turned	
KDN 80-160/153-136 4P	Turned	
KDN 80-160/153 4P	Turned	
KDN 80-160/161 4P	Turned	
KDN 80-160/169 4P	Turned	
KDN 80-160/177 2P	Full	≥ 0,40
KDN 80-160/147-127 2P	Turned	
KDN 80-160/153-136 2P	Turned	
KDN 80-160/153 2P	Turned	
KDN 80-160/161 2P	Turned	
KDN 80-160/169 2P	Turned	
KDN 80-200/222 4P	Full	≥ 0,50
KDN 80-200/170 4P	Turned	
KDN 80-200/180 4P	Turned	
KDN 80-200/190 4P	Turned	
KDN 80-200/200 4P	Turned	
KDN 80-200/210 4P	Turned	
KDN 80-200/222 2P	Full	≥ 0,40
KDN 80-200/170 2P	Turned	
KDN 80-200/180 2P	Turned	
KDN 80-200/190 2P	Turned	
KDN 80-200/200 2P	Turned	
KDN 80-200/210 2P	Turned	

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PUMP MODEL	IMPELLER	MEI
KDN 80-250/270 4P	Full	≥ 0,40
KDN 80-250/220 4P	Turned	
KDN 80-250/230 4P	Turned	
KDN 80-250/240 4P	Turned	
KDN 80-250/250 4P	Turned	
KDN 80-250/260 4P	Turned	
KDN 80-250/270 2P	Full	≥ 0,40
KDN 80-250/220 2P	Turned	
KDN 80-250/230 2P	Turned	
KDN 80-250/240 2P	Turned	
KDN 80-250/250 2P	Turned	
KDN 80-250/260 2P	Turned	
KDN 80-315/334 4P	Full	≥ 0,40
KDN 80-315/275 4P	Turned	
KDN 80-315/290 4P	Turned	
KDN 80-315/305 4P	Turned	
KDN 80-315/320 4P	Turned	
KDN 80-315/290 2P	Full	≥ 0,40
KDN 80-315/275 2P	Turned	
KDN 100-200/219 4P	Full	≥ 0,40
KDN 100-200/180 4P	Turned	
KDN 100-200/190 4P	Turned	
KDN 100-200/200 4P	Turned	
KDN 100-200/210 4P	Turned	
KDN 100-200/219 2P	Full	≥ 0,40
KDN 100-200/180 2P	Turned	
KDN 100-200/190 2P	Turned	
KDN 100-200/200 2P	Turned	
KDN 100-200/210 2P	Turned	

PUMP MODEL	IMPELLER	MEI
KDN 100-250/270 4P	Full	≥ 0,40
KDN 100-250/220 4P	Turned	
KDN 100-250/230 4P	Turned	
KDN 100-250/240 4P	Turned	
KDN 100-250/250 4P	Turned	
KDN 100-250/260 4P	Turned	
KDN 100-250/260 2P	Full	≥ 0,40
KDN 100-250/220 2P	Turned	
KDN 100-250/230 2P	Turned	
KDN 100-250/240 2P	Turned	
KDN 100-250/250 2P	Turned	
KDN 100-315/334 4P	Full	≥ 0,40
KDN 100-315/275 4P	Turned	
KDN 100-315/290 4P	Turned	
KDN 100-315/305 4P	Turned	
KDN 100-315/320 4P	Turned	≥ 0,40
KDN 125-250/269 4P	Full	
KDN 125-250/220 4P	Turned	
KDN 125-250/230 4P	Turned	
KDN 125-250/240 4P	Turned	
KDN 125-250/250 4P	Turned	
KDN 125-250/260 4P	Turned	not applicable
KDN 150-200/218 4P	Full	
KDN 150-200/210-170 4P	Turned	
KDN 150-200/218-182 4P	Turned	
KDN 150-200/218-200 4P	Turned	

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PUMP MODEL	NUMBER OF STAGES	MEI	η_{PL}	η_{BEP}	η_{OL}
KVC 25/30 M	3	$\geq 0,40$	31.30	34.00	33.56
KVC 25/30 T			32.38	34.30	33.85
KVC 15/30 M	2		35.93	38.72	38.51
KVC 15/30 T			29.86	31.50	31.20
KVC 35/30 M	4		35.95	38.50	37.99
KVC 35/30 T			34.43	37.02	36.55
KVC 45/30 M	5		34.29	36.35	36.08
KVC 45/30 T			35.00	37.44	37.00
KVC 50/30 M	6		29.03	30.86	30.56
KVC 50/30 T			30.67	32.77	32.21
KVC 60/30 M	7		28.82	30.95	30.56
KVC 60/30 T			30.25	32.28	31.96
KVC 70/30 M	8		35.16	37.89	37.32
KVC 70/30 T			30.29	32.40	31.98
KVC 30/50 M	3		40.75	43.10	42.76
KVC 30/50 T			40.19	43.10	42.60
KVC 20/50 M	2	41.40	42.95	42.35	
KVC 20/50 T		38.53	41.47	41.04	
KVC 40/50 M	4	40.73	43.34	42.91	
KVC 40/50 T		38.85	41.40	40.92	
KVC 55/50 M	5	38.90	41.70	41.20	
KVC 55/50 T		38.97	41.61	41.15	
KVC 65/50 M	6	37.53	39.21	38.75	
KVC 65/50 T		36.52	40.13	39.42	
KVC 75/50 M	7	36.39	38.91	38.35	
KVC 75/50 T		36.51	39.61	39.05	
KVC 20/80 M	3	45.00	47.70	47.37	
KVC 20/80 T		45.45	47.80	47.29	
KVC 15/80 M	2	43.13	46.70	45.99	
KVC 15/80 T		41.78	44.09	43.43	
KVC 30/80 M	4	44.06	46.30	45.84	
KVC 30/80 T		42.16	45.10	44.44	
KVC 40/80 M	5	43.43	46.97	46.80	
KVC 40/80 T		41.94	44.40	43.89	
KVC 45/80 M	6	41.91	43.96	43.57	
KVC 45/80 T		41.06	43.74	43.31	
KVC 55/80 M	7	41.05	43.00	42.63	
KVC 55/80 T		40.75	43.51	43.05	
KVC 65/80 T	8	41.08	44.02	43.48	
		$\geq 0,60$			
		$\geq 0,40$			

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PUMP MODEL	NUMBER OF STAGES	MEI	η_{PL}	η_{BEP}	η_{OL}
KVC 35/120 M	3	$\geq 0,50$	49.31	51.00	50.76
KVC 35/120 T			49.83	51.80	51.38
KVC 25/120 M	2		45.13	46.90	46.75
KVC 25/120 T			42.16	44.54	44.20
KVC 45/120 M	4		47.59	49.50	48.96
KVC 45/120 T			47.47	49.30	49.00
KVC 60/120 T	5		47.81	49.44	48.97
KVC 70/120 T	6		47.58	49.00	48.61
KVC 85/120 T	7		49.23	50.84	50.20

PUMP MODEL	NUMBER OF STAGES	MEI	η_{PL}	η_{BEP}	η_{OL}	
KV 3/10 M	10	$\geq 0,40$	47.83	52.40	51.69	
KV 3/10 T			48.71	52.30	51.44	
KV 3/12 M	12		49.22	53.67	52.94	
KV 3/12 T			45.09	48.45	47.97	
KV 3/15 M	15		46.57	50.40	49.75	
KV 3/15 T			47.81	52.55	51.54	
KV 3/18 T	18		48.11	41.91	51.17	
KV 6/7 M	7		$\geq 0,40$	50.28	54.00	53.47
KV 6/7 T				50.66	54.57	53.74
KV 6/9 M	9			50.52	55.10	54.34
KV 6/9 T		45.85		49.42	49.11	
KV 6/11 M	11	49.10		52.67	52.16	
KV 6/11 T		48.37		51.58	51.06	
KV 6/15 T	15	51.09		55.20	54.44	
KV 10/4 M	4	$\geq 0,40$		53.89	55.88	55.60
KV 10/4 T				53.72	57.24	56.93
KV 10/5 M	5			54.72	57.27	56.81
KV 10/5 T			54.92	57.35	56.73	
KV 10/6 M	6		57.77	60.20	59.48	
KV 10/6 T			57.97	60.30	59.88	
KV 10/8 T	8		57.41	60.77	60.59	

HYDRAULIC EFFICIENCY

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PUMP MODEL	NUMBER OF STAGES	MEI	η_{PL}	η_{BEP}	η_{OL}
NKV 10/3	3	$\geq 0,60$	63.39	66.41	65.77
NKV 10/2	2		64.88	67.70	67.39
NKV 10/4	4		63.30	65.89	65.29
NKV 10/5	5		65.48	69.58	68.81
NKV 10/6	6		66.55	68.40	67.76
NKV 10/7	7		66.11	68.52	67.86
NKV 10/8	8		64.66	67.13	66.08
NKV 10/9	9		66.77	68.94	68.26
NKV 10/10	10		66.44	69.13	68.43
NKV 10/12	12		65.97	68.88	67.71
NKV 10/14	14		63.80	66.29	65.51
NKV 10/16	16		62.88	65.32	64.69
NKV 10/18	18		64.39	66.91	66.19
NKV 10/20	20		64.45	66.82	66.19
NKV 10/22	22	65.23	67.61	66.72	

PUMP MODEL	NUMBER OF STAGES	MEI	η_{PL}	η_{BEP}	η_{OL}
NKV 15/3	3	$\geq 0,60$	68.74	72.03	71.26
NKV 15/2	2		67.43	71.35	70.68
NKV 15/4	4		70.15	72.54	71.91
NKV 15/5	5		70.40	74.23	73.48
NKV 15/6	6		70.19	73.29	72.46
NKV 15/7	7		69.81	73.65	72.91
NKV 15/8	8		68.06	71.49	70.86
NKV 15/9	9		69.77	73.07	72.30
NKV 15/10	10		66.95	70.35	69.67
NKV 15/12	12		70.09	74.28	73.55
NKV 15/14	14		69.44	72.75	72.00
NKV 15/16	16		70.90	74.76	74.01
NKV 15/17	17		70.55	74.26	73.35

HYDRAULIC EFFICIENCY

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PUMP MODEL	NUMBER OF STAGES	MEI	η_{PL}	η_{BEP}	η_{OL}
NKV 20/3	3	$\geq 0,60$	70.47	71.40	70.59
NKV 20/2	2		67.45	73.36	72.50
NKV 20/4	4		66.24	69.74	69.33
NKV 20/5	5		72.31	74.50	73.90
NKV 20/6	6		70.37	73.40	72.90
NKV 20/7	7		70.13	74.04	73.38
NKV 20/8	8		69.63	72.06	71.60
NKV 20/9	9		71.68	74.41	73.68
NKV 20/10	10		70.44	73.42	72.96
NKV 20/12	12		71.47	74.11	73.45
NKV 20/14	14		71.33	75.51	74.86
NKV 20/16	16		71.04	74.50	74.00
NKV 20/17	17		71.67	74.66	74.14

PUMP MODEL	NUMBER OF STAGES	MEI	η_{PL}	η_{BEP}	η_{OL}
NKV 32/3	3	$\geq 0,70$	70.08	74.12	73.16
NKV 32/2-2	2		65.89	69.98	69.26
NKV 32/2	2		70.08	74.12	73.16
NKV 32/3-2	3		67.38	71.10	70.20
NKV 32/4-2	4		68.05	71.78	70.92
NKV 32/4	4		70.08	74.12	73.16
NKV 32/5-2	5		68.40	72.20	71.44
NKV 32/5	5		70.08	74.12	73.16
NKV 32/6-2	6		68.62	72.49	71.81
NKV 32/6	6		70.08	74.12	73.16
NKV 32/7-2	7		68.82	72.70	72.04
NKV 32/7	7		70.08	74.12	73.16
NKV 32/8-2	8		68.96	72.86	72.22
NKV 32/8	8		70.08	74.12	73.16
NKV 32/9-2	9		69.06	72.98	72.37
NKV 32/9	9		70.08	74.12	73.16
NKV 32/10-2	10		69.15	73.09	72.47
NKV 32/10	10		70.08	74.12	73.16
NKV 32/11-2	11		69.24	73.17	72.55
NKV 32/11	11		70.08	74.12	73.16
NKV 32/12-2	12		69.29	73.25	72.63
NKV 32/12	12		70.08	74.12	73.16
NKV 32/13-2	13		69.37	73.31	72.66
NKV 32/13	13	70.08	74.12	73.16	

HYDRAULIC EFFICIENCY

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PUMP MODEL	NUMBER OF STAGES	MEI	η_{PL}	η_{BEP}	η_{OL}
NKV 45/3	3	$\geq 0,70$	73.47	76.37	75.25
NKV 45/2-2	2		69.13	71.65	70.46
NKV 45/2	2		73.47	76.37	75.25
NKV 45/3-2	3		69.79	73.42	72.55
NKV 45/4-2	4		70.11	74.21	73.56
NKV 45/4	4		73.47	76.37	75.25
NKV 45/5-2	5		70.36	74.67	74.14
NKV 45/5	5		73.47	76.37	75.25
NKV 45/6-2	6		70.50	74.96	74.52
NKV 45/6	6		73.47	76.37	75.25
NKV 45/7-2	7		70.56	75.16	74.80
NKV 45/7	7		73.47	76.37	75.25
NKV 45/8-2	8		70.67	75.32	75.00
NKV 45/8	8		73.47	76.37	75.25
NKV 45/9-2	9		70.70	75.43	75.16
NKV 45/9	9		73.47	76.37	75.25
NKV 45/10-2	10		70.73	75.52	75.28
NKV 45/10	10		73.47	76.37	75.25
NKV 45/11-2	11		70.82	75.60	75.38
NKV 45/11	11		73.47	76.37	75.25
NKV 45/12-2	12	70.84	75.66	75.46	
NKV 45/12	12	73.47	76.37	75.25	
NKV 45/13-2	13	70.85	75.71	75.54	

PUMP MODEL	NUMBER OF STAGES	MEI	η_{PL}	η_{BEP}	η_{OL}
NKV 65/3	3	$\geq 0,70$	73.71	78.96	77.11
NKV 65/2-2	2		70.92	77.97	77.08
NKV 65/2	2		73.71	78.96	77.11
NKV 65/3-2	3		72.27	77.22	76.17
NKV 65/4-2	4		72.52	77.33	76.58
NKV 65/4	4		73.71	78.96	77.11
NKV 65/5-2	5		73.15	77.48	76.31
NKV 65/5	5		73.71	78.96	77.11
NKV 65/6-2	6		73.78	77.69	75.76
NKV 65/6	6		73.71	78.96	77.11
NKV 65/7-2	7		73.84	77.87	75.86
NKV 65/7	7		73.71	78.96	77.11
NKV 65/8-2	8		73.87	78.00	75.94
NKV 65/8	8		73.71	78.96	77.11

HYDRAULIC EFFICIENCY

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PUMP MODEL	NUMBER OF STAGES	MEI	η_{PL}	η_{BEP}	η_{OL}
NKV 95/3	3	$\geq 0,70$	74.38	79.43	77.94
NKV 95/2-2	2		72.37	78.87	77.79
NKV 95/2	2		74.38	79.43	77.94
NKV 95/3-2	3		73.03	78.58	77.65
NKV 95/4-2	4		73.56	78.64	77.44
NKV 95/4	4		74.38	79.43	77.94
NKV 95/5-2	5		73.82	78.74	77.41
NKV 95/5	5		74.38	79.43	77.94
NKV 95/6-2	6		73.90	78.83	77.51
NKV 95/6	6		74.38	79.43	77.94