

50 Hz



e-NSC Series

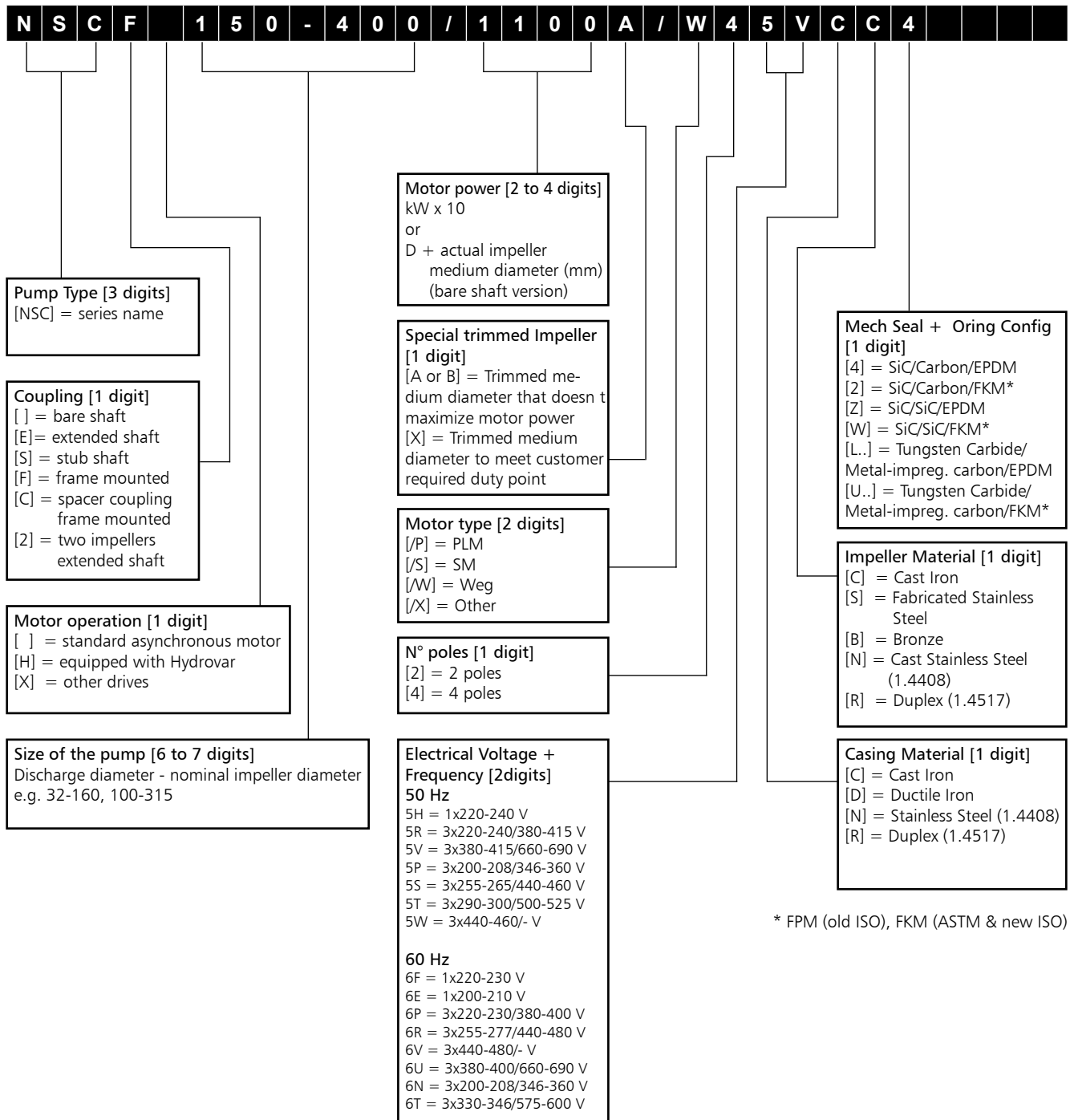
HORIZONTAL CENTRIFUGAL ELECTRIC PUMPS
EQUIPPED WITH **IE3** MOTORS

ErP 2009/125/EC

Cod. 191002951 Rev. F Ed.03/2016

 **LOWARA**
a xylem brand

**e-NSC SERIES
IDENTIFICATION CODE**



* FPM (old ISO), FKM (ASTM & new ISO)

EXAMPLES

NSCS 100-250/900/W25RCC4

End-suction, electric pump with stub shaft coupling, DN 100 nominal discharge port, 250 mm nominal impeller diameter, 90 kW rated motor power, WEG IE3 model, 2-pole, 50 Hz 220-240/380-415 V, cast iron casing, cast iron impeller, Silicon carbide/Carbon/EPDM mechanical seal.

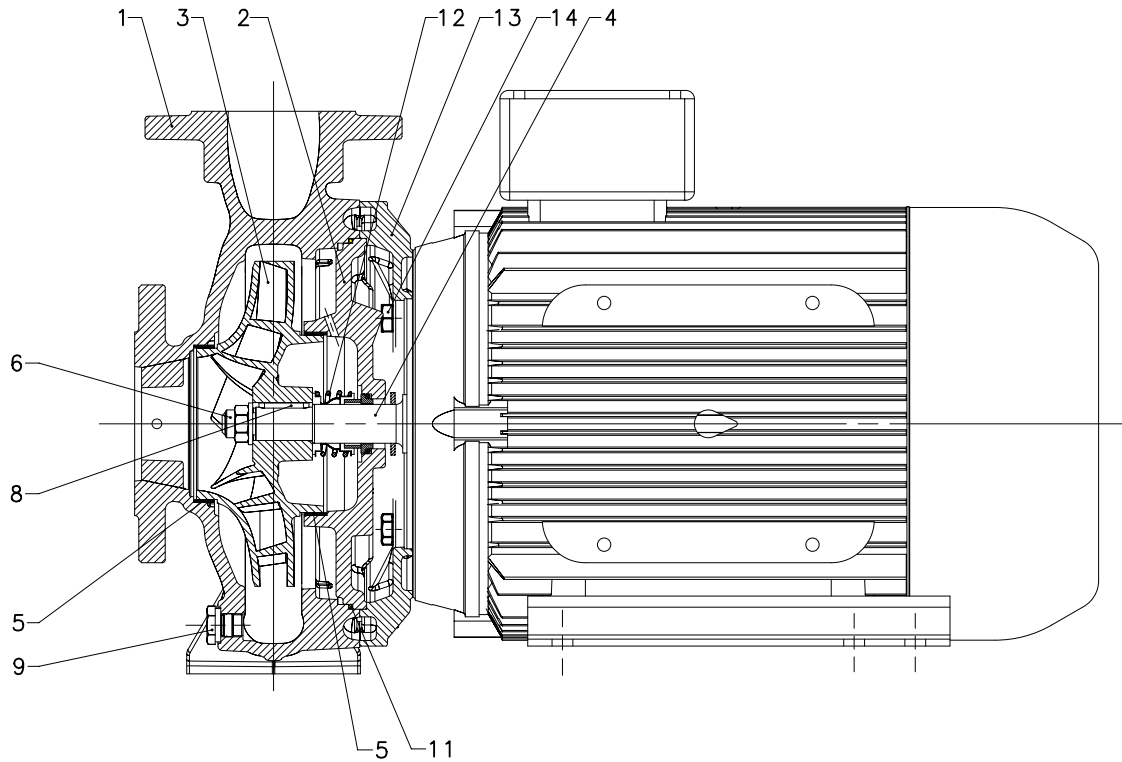
NSCF 150-400/1100A/W45VCC4

End-suction, electric pump with frame mounted coupling, DN 150 nominal discharge port, 400 mm nominal impeller diameter, 110 kW rated motor power, trimmed impeller, WEG IE3 model, 4-pole, 50 Hz 380-415/660-690 V, cast iron casing, cast iron impeller, Silicon carbide/Carbon/EPDM mechanical seal.

NSC 150-400/D423CCZ

End-suction, bare shaft pump, DN 150 nominal discharge port, 400 mm nominal impeller diameter, 423 mm actual impeller medium diameter, cast iron casing, cast iron impeller, Silicon carbide/ Silicon carbide/EPDM mechanical seal.

NSCE SERIES ELECTRIC PUMP CROSS-SECTION AND MAIN COMPONENTS



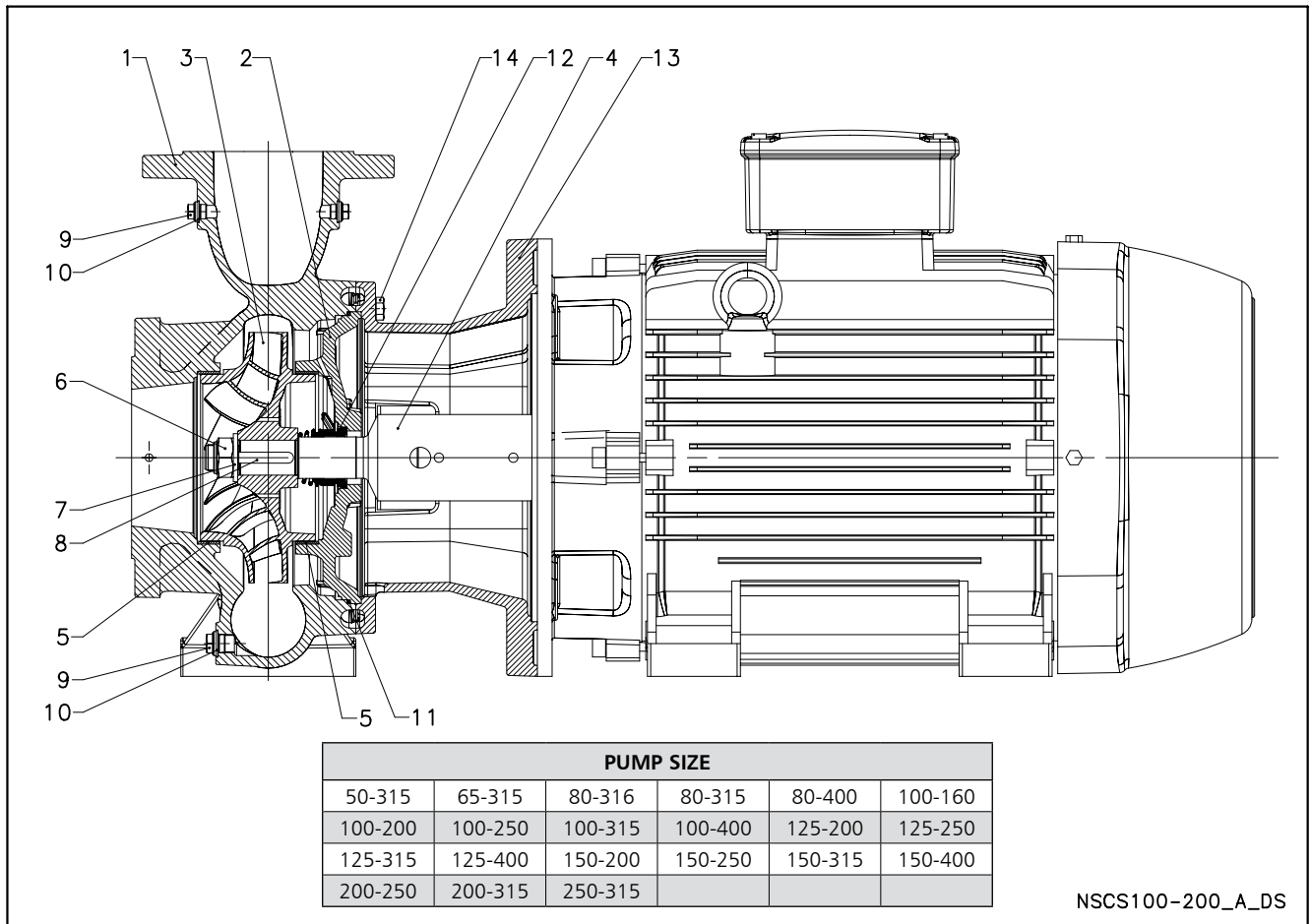
NSCE_A_DS

REF. N.	PART	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Volute casing	Cast iron	EN 1561 - GJL-250 (JL1040)	ASTM Class 35
2	Casing cover	Cast iron	EN 1561 - GJL-250 (JL1040)	ASTM Class 35
3	Impeller (32, 40, 50)	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
	Impeller (65, 80)	Cast iron	EN 1561 - GJL-200 (JL1030)	ASTM Class 30
	Impeller (65, 80)	Bronze	EN 1982 - CuSn10-C (CC480K)	UNS C90700
4	Shaft extension	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
5	Wear ring	Stainless steel	EN 10088-X5CrNi18-10 (1.4301)	AISI 304
6	Impeller lock nut and washer	Stainless steel	EN 10088-1-X5CrNiMo17-12-2 (1.4401)	AISI 316
8	Impeller key	Stainless steel	EN 10088-1-X2CrNiMo17-12-2 (1.4404)	AISI 316L
9	Fill and drain plugs	Nickel-plated brass	EN 12164-CuZn39Pb3 (CW614N)	-
11	O-Ring	EPDM (standard version)		
12	Mechanical seal	Carbon / Silicon carbide / EPDM (standard version)		
13	Motor adapter *	Aluminium	EN 1706-AC-AISI11Cu2 (Fe) (AC46100)	-
	Motor adapter	Cast iron	EN 1561 - GJL-250 (JL1040)	ASTM Class 35
14	Volute casing fastening bolts and screws	Galvanized steel		

* 2/4 pole: 32/40/50-125, 32/40-160

Nsce-en_a_tm

NSCS SERIES ELECTRIC PUMP CROSS-SECTION AND MAIN COMPONENTS



REF. N.	PART	MATERIAL	REFERENCE STANDARDS	
			EUROPE	USA
1	Volute casing	Cast iron	EN 1561 - GJL-250 (JL1040)	ASTM Class 35
	Volute casing (200-250, 200-315, 250/315)	Cast ductile iron	EN 1563 - EN-GJS400-15 (EN-JS1030)	ASTM A536 40-60-18
2	Casing cover	Cast iron	EN 1561 - GJL-250 (JL1040)	ASTM Class 35
	Casing cover (200-250, 200-315, 250/315)	Cast ductile iron	EN 1563 - EN-GJS400-15 (EN-JS1030)	ASTM A536 40-60-18
3	Impeller	Cast iron	EN 1561 - GJL-200 (JL1030)	ASTM Class 30
	Impeller	Bronze	EN 1982 - CuSn10-C (CC480K)	UNS C90700
4	Stub shaft	Stainless steel	EN 10088 - X17CrNi16-2 (1.4057)	AISI 431
5	Wear ring	Stainless steel	EN 10088 - X5CrNi18-10 (1.4301)	AISI 304
6	Impeller nut	Stainless steel	A4 (~ 1.4401)	
7	Impeller washer	Stainless steel	A4 (~ 1.4401)	
8	Impeller key	Stainless steel	EN 10088 - X6CrNiMo17-12-2 (1.4571)	AISI 316Ti
9	Plug	Stainless steel	EN 10088 - X6CrNiMo17-12-2 (1.4571)	AISI 316Ti
10	Gasket	Asbestos-free synthetic fiber AFM 34		
11	O-Ring	EPDM (standard version)		
12	Mechanical seal	Carbon / Silicon carbide / EPDM (standard version)		
13	Motor adapter	Cast iron	EN 1561 - GJL-250 (JL1040)	ASTM Class 35
14	Volute - casing fastening screws	Carbon steel		

Nscs100-200-en_a_tm

e-NSC SERIES PUMPS

With the Energy using Products (EuP 2005/32/EC) and Energy related Products (ErP 2009/125/EC) directives, the European Commission has established requirements for promoting the use of products with low power consumption.

The **Commission Regulation (EU) No 547/2012** has implemented two directives with regard to ecodesign requirements for **some types of clean water pumps** placed on the market and put into service inside EU zone as self-alone units or integrated in other products.

For end-suction close-coupled pumps (ESCC for the Regulation) and end-suction own-bearing pumps (ESOB for the Regulation) the efficiency assessment refers to:

- just the pump and not the pump and motor assembly (electric or combustion);
- pumps with just one impeller;
- pumps with a nominal pressure PN not higher than 16 bar (1600 kPa);
- pumps with a minimum nominal flow not less than 6 m³/h;
- pumps with a maximum nominal power at the shaft not higher than 150 kW;
- pumps designed to operate at a speed of 2900 min⁻¹ (for electric pumps this means 50 Hz 2-pole electric motors) and with a head not greater than 140 metres;
- pumps designed to operate at a speed of 1450 min⁻¹ (for electric pumps this means 50 Hz 4-pole electric motors) and with a head not greater than 90 metres;
- use with clean water at a temperature ranging from -10°C to 120°C (the test is performed with cold water at a temperature not higher than 40°C).

According to the definitions established in the Regulation NSCE and NSCS versions correspond to the end-suction close-coupled pump while NSC, NSCF and NSCC versions correspond to the end-suction own bearing pump. This regulation states that water pumps shall have a minimum index MEI coming from a dedicated formula which considers hydraulic efficiency values at best efficiency point (BEP), 75 % of the flow at BEP (Part load PL) and 110 % of the flow at BEP (Over load OL).

The Regulation also establishes the following deadlines.

from	minimum efficiency index (MEI)
1 st January 2013	MEI ≥ 0,1
1 st January 2015	MEI ≥ 0,4

NSC2 models are out of the scope of the Regulation.

Regulation (EU) n. 547/2012 Annex II point 2 (Product information requirements)

- 1) Minimum efficiency index: see MEI values in specific tables on following page.
- 2) The benchmark for most efficient water pumps is MEI ≥ 0,70.
- 3) Year of manufacture: 2014.
- 4) Manufacturer: Xylem Service Italia Srl - Reg. No 07520560967 - Montecchio Maggiore, Vicenza, Italy.
- 5) Product type: see the PUMP TYPE column in the tables in the *Hydraulic performance* section.
- 6) Hydraulic pump efficiency with trimmed impeller: see η_p and $\varnothing T$ columns in the tables in the *Hydraulic performance* section.
- 7) Pump performance curves, including the performance curve: see the *Operating Characteristics* graphs in the following pages.
- 8) 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 will adapt the pump to a fixed duty point, leading to reduced energy consumption. The minimum efficiency index (MEI) is based on the full impeller diameter.
- 9) The operation of this water pump with variable duty points may be more efficient and economic when controlled, for example, by the use of a variable speed drive that matches the pump duty to the system.
- 10) Information relevant for disassembly, recycling or disposal at end-of-life: observe the current laws and by-laws governing sorted waste disposal. Consult the product operating manual.
- 11) Designed for use below 10 °C only : note not applicable to these products.
- 12) Designed for use above 120 °C only : note not applicable to these products.
- 13) Specific instructions for pumps as per points 11 and 12: not applicable to these products.
- 14) Information on benchmark efficiency is available at : www.europump.org (Ecodesign section).
- 15) The benchmark efficiency graphs with MEI = 0.7 and MEI = 0.4 are available at www.europump.org, Ecodesign, Efficiency charts (refer to ESCC 1450 rpm , ESCC 2900 rpm , ESOB 1450 rpm , ESOB 2900 rpm).

e-NSC 65, 80 SERIES

HYDRAULIC PERFORMANCE RANGE AT 50 Hz, 4 POLES

PUMP TYPE	P _N kW	Ø Impeller (mm)				Q = DELIVERY													
		STD	B	● (2)	ηp % (3)	l/s	0	3,3	6,3	9,3	12,2	15,2	18,2	21,2	24,2	27,2	30,1	33,1	36,1
						m³/h	0	12	23	33	44	55	66	76	87	98	109	119	130
						H = TOTAL HEAD METRES COLUMN OF WATER													
65-125/05	0,55	113	108	○	75,0	3,5		3,4	3,1	2,7	2,1								
65-125/07	0,75	127	121	○	77,0	4,9		4,7	4,4	3,9	3,2	2,4							
65-125/11	1,1	137	132	○	78,3	5,8		5,8	5,6	5,1	4,5	3,6	2,7						
65-125/15	1,5	148	144	●	79,5	7,2		7,1	6,9	6,5	6,0	5,4	4,6	3,6					
65-160/11A	1,1	145	144	○	77,1	6,4		6,4	6,0	5,4	4,4	3,4							
65-160/15B	1,5	145	144	○	77,1	6,4		6,4	6,0	5,4	4,4	3,4							
65-160/11	1,1	151	152	○	78,0	7,2		7,0	6,7	6,1	5,2	4,1							
65-160/15A	1,5	151	152	○	78,0	7,2		7,0	6,7	6,1	5,2	4,1							
65-160/15	1,5	159	160	○	79,6	8,2		8,0	7,7	7,1	6,3	5,3							
65-160/22A	2,2	175	176	○	81,8	10,2		10,1	9,9	9,4	8,8	7,9	6,8	5,6					
65-160/22	2,2	180	180	●	82,1	10,9		10,8	10,5	10,0	9,3	8,4	7,4	6,1					
65-200/15	1,5	165	162	○	73,1	8,9	8,9	8,7	8,2	7,2	5,7								
65-200/22A	2,2	177	177	○	74,6	10,6		10,5	10,0	9,2	7,8	6,0							
65-200/22	2,2	189	189	○	76,9	12,1		12,0	11,6	10,8	9,6	7,9	5,7						
65-200/30	3	199	199	○	78,0	13,6		13,6	13,2	12,6	11,5	9,9	7,8						
65-200/40	4	220	218	●	80,0	17,0		16,9	16,7	16,1	15,3	14,1	12,5	10,3					
65-250/30	3	195	192	○	73,9	12,6		13,2	12,8	12,0	10,8	9,3	7,3						
65-250/40	4	215	213	○	74,3	15,7		16,2	15,8	15,1	14,1	12,7	11,0	8,9					
65-250/55A	5,5	229	226	○	76,0	18,1		19,0	18,7	18,1	17,3	16,1	14,6	12,8	10,5				
65-250/55	5,5	243	240	○	77,2	20,7		21,3	21,2	20,7	20,0	18,9	17,5	15,8	13,7				
65-250/75	7,5	258	255	●	77,6	24,3		24,6	24,3	23,8	23,0	22,0	20,8	19,2	17,4	15,2			
65-315/55	5,5	260	260	○	68,1	22,7		22,4	21,7	20,8	19,6	18,0	15,7	12,7					
65-315/75	7,5	285	285	○	70,4	27,6		27,3	26,8	26,0	24,8	23,3	21,4	18,9	15,9				
65-315/110	11	315	315	○	71,4	34,7		34,5	34,0	33,3	32,3	31,0	29,3	27,2	24,6	21,4	17,3		
65-315/150	15	334	334	●	72,2	39,0		38,9	38,5	37,8	36,8	35,5	33,9	32,0	29,7	27,0	23,8	20,3	

PUMP TYPE	P _N kW	Ø Impeller (mm)				Q = DELIVERY													
		std	a	●	ηp %	l/s 0	5,6	10,7	15,7	20,8	25,8	30,9	35,9	40,9	46,0	51,0	56,1	61,1	
						m³/h 0	20	38	57	75	93	111	129	147	166	184	202	220	
						H = TOTAL HEAD METRES COLUMN OF WATER													
80-160/15	1,5	144	144	○	72,1	6,5		6,2	5,5	4,5	3,5								
80-160/22A	2,2	158	158	○	78,4	8,3		7,9	7,3	6,5	5,4	4,2							
80-160/22	2,2	168	168	○	79,0	9,3		9,0	8,5	7,6	6,5	5,2	3,8						
80-160/30	3	177	177	●	81,2	10,5		10,2	9,8	9,0	8,0	6,7	5,3						
80-200/30	3	181	177	○	77,1	10,8		10,6	10,1	9,3	8,2								
80-200/40	4	195	192	○	79,7	12,8		12,7	12,4	11,6	10,4	8,9							
80-200/55A	5,5	208	204	○	82,0	15,0		14,9	14,5	13,9	12,8	11,3							
80-200/55	5,5	219	216	●	82,5	16,9		16,5	16,2	15,6	14,7	13,5	11,8						
80-250/55A	5,5	214	211	○	80,0	16,4		16,0	15,4	14,4	13,1	11,3	9,1	6,5					
80-250/55	5,5	227	224	○	80,1	18,2		18,2	17,6	16,6	15,3	13,5							
80-250/75	7,5	241	238	○	80,8	21,0		20,7	20,2	19,4	18,1	16,4	14,4						
80-250/110	11	259	256	●	82,2	24,1		23,9	23,7	23,2	22,2	20,8	19,0	16,7					
80-315/110A	11	262	262	○	75,8	23,1		23,1	22,7	21,9	20,4	18,4	15,8	12,8	9,6				
80-315/110	11	280	280	○	76,0	26,6		26,6	26,4	25,7	24,5	22,8	20,4	17,5					
80-315/150	15	304	304	○	76,9	31,6		31,7	31,6	31,2	30,3	28,9	26,8	24,3	21,2				
80-315/185	18,5	321	321	○	77,2	35,5		35,6	35,5	35,2	34,4	33,2	31,4	29,1	26,2	22,7			
80-315/220	22	334	334	●	77,8	38,6		38,7	38,6	38,3	37,6	36,4	34,8	32,7	30,0	26,7			
80-400/185	18,5	338	338	○	69,9	39,1		39,0	38,2	37,0	35,3	33,3	30,6	27,0	22,0	15,0	5,1		
80-400/220	22	356	356	○	71,3	43,8	44,0	43,8	43,2	42,0	40,4	38,4	36,1	33,1	29,1				
80-400/300	30	388	388	○	72,5	53,1		52,8	52,6	51,7	50,2	48,3	46,1	43,7	40,8				
80-400/370	37	418	418	●	73,8	62,6		61,9	61,7	61,0	59,7	57,9	55,9	53,5	50,9	47,8			

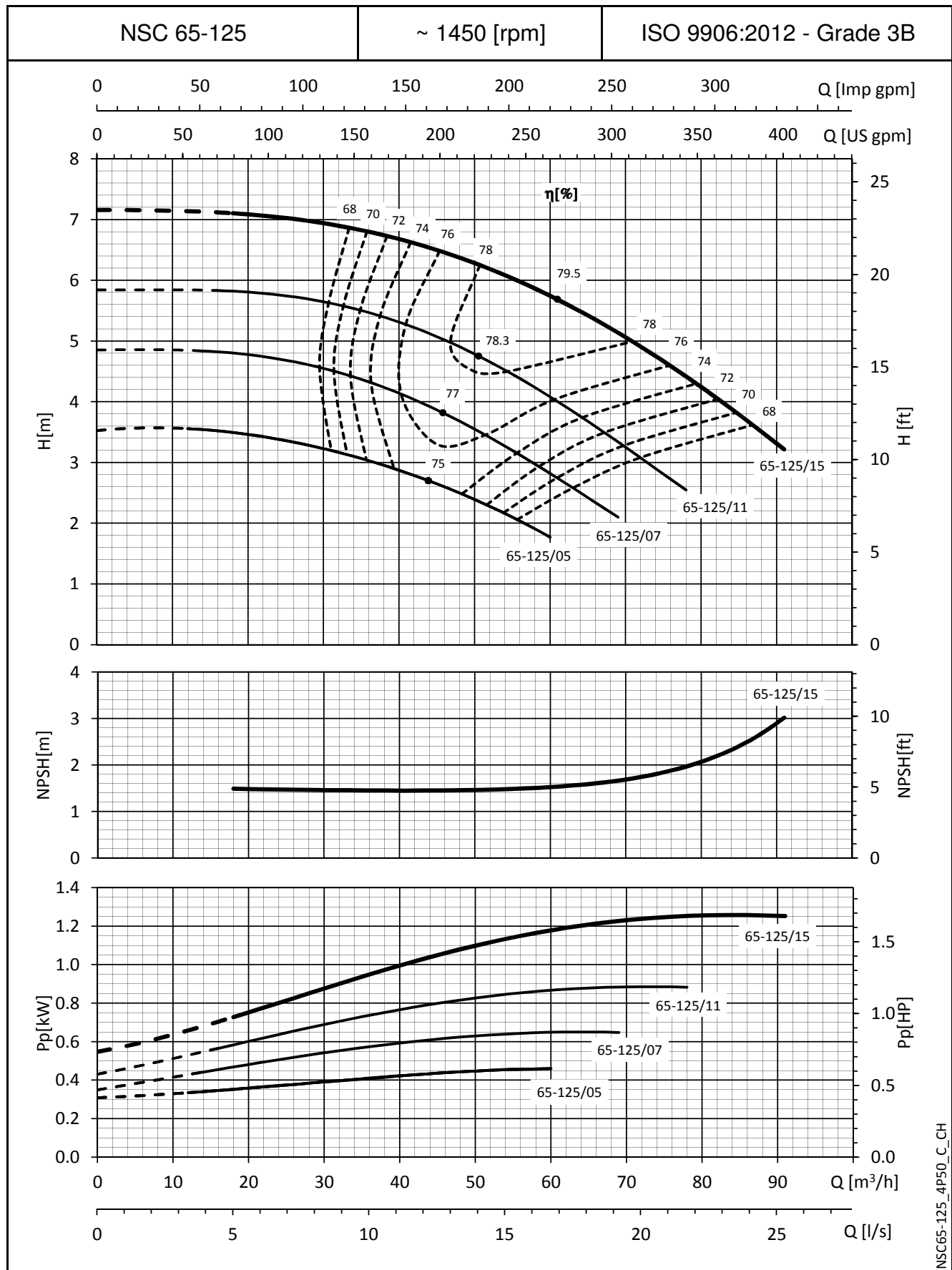
Hydraulic performances in compliance with ISO 9906:2012 - Grade 3B (ex ISO 9906:1999 - Annex A)

Nsc-65-80_4p50-en_c_th

(1) STD = Cast iron/Stainless steel - B = Bronze (2) ● = Full impeller diameter - ○ = Trimmed impeller diameter (3) Hydraulic efficiency of pump.

e-NSC SERIES

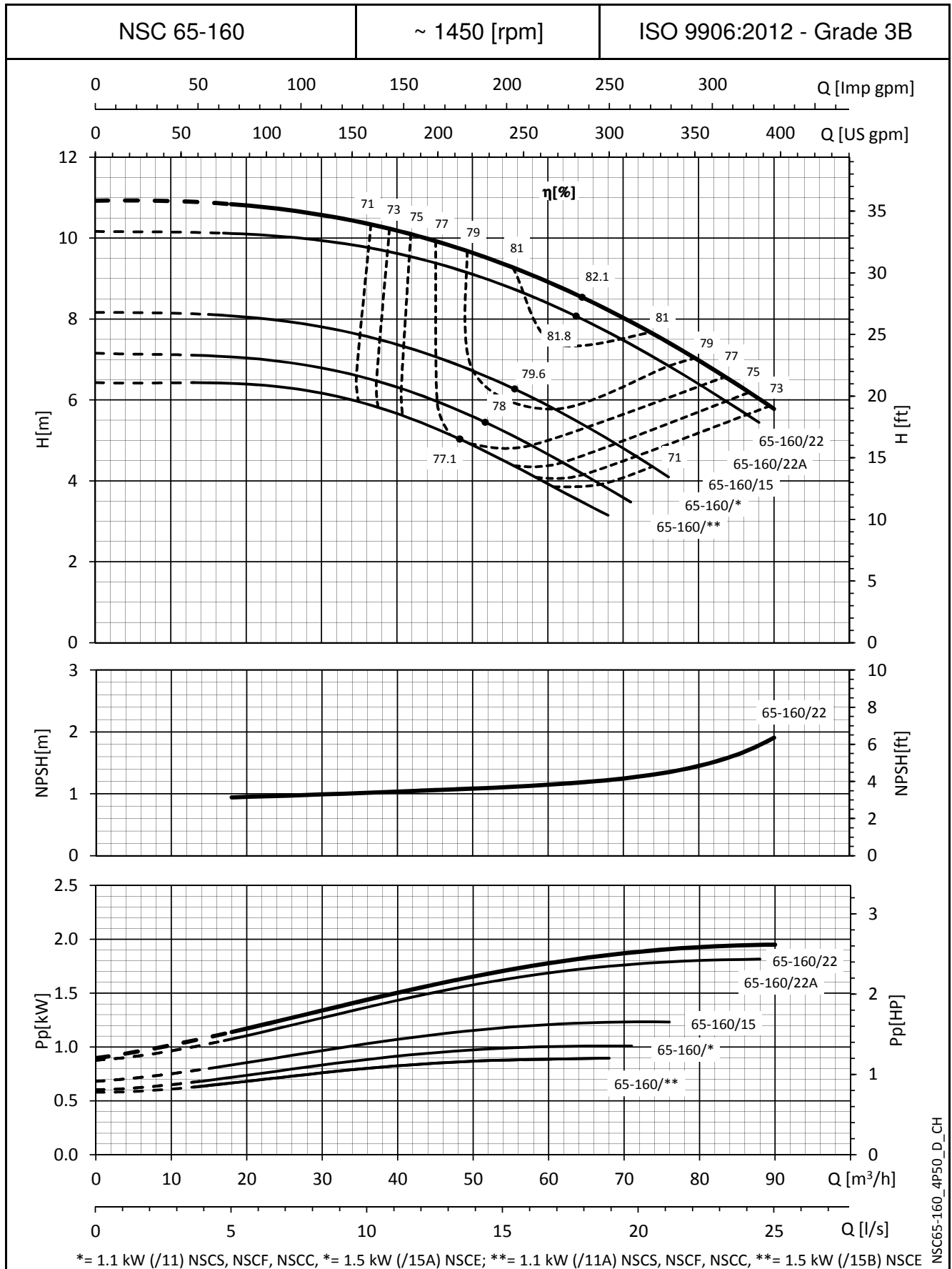
OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

e-NSC SERIES

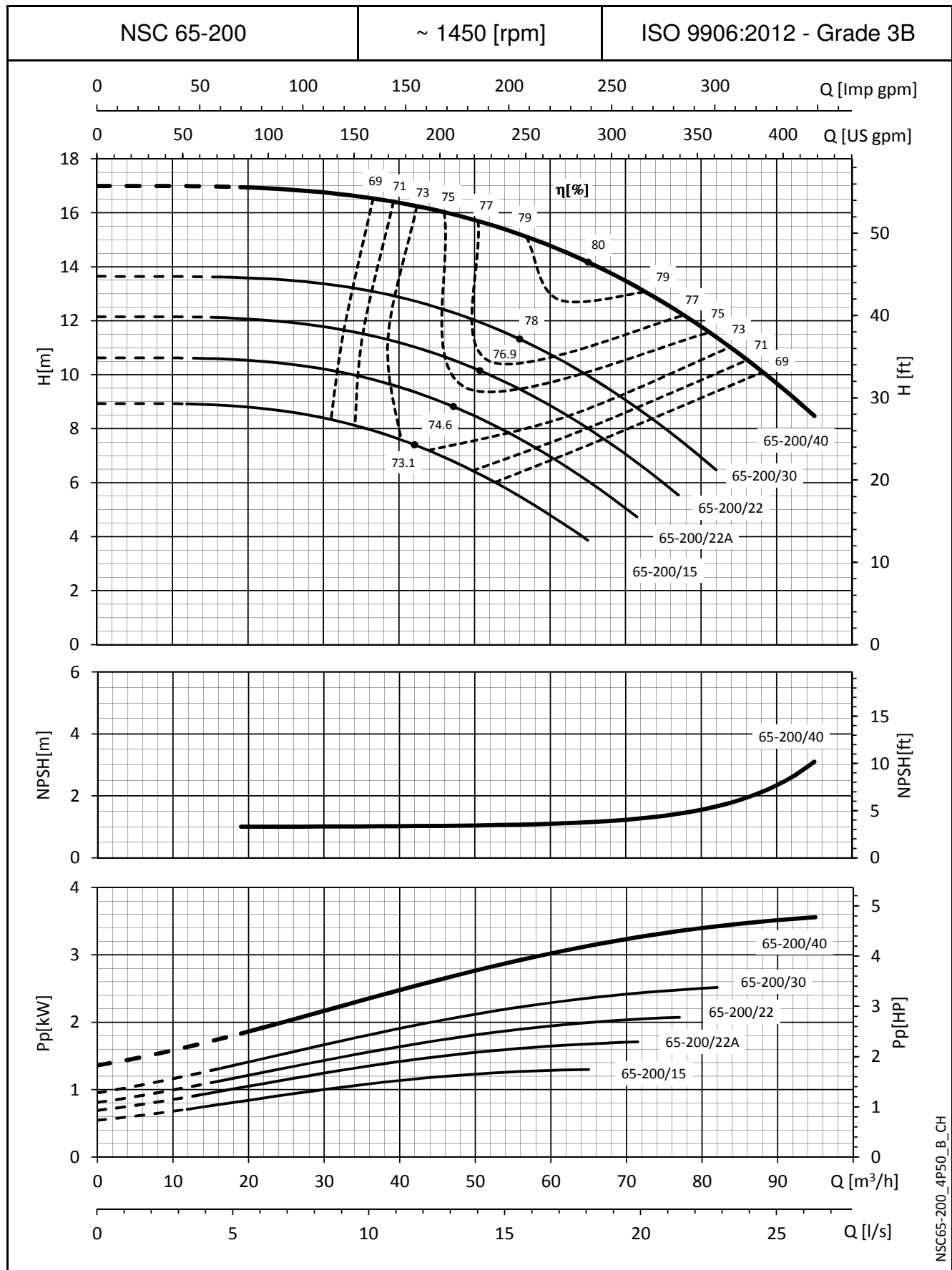
OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



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e-NSC SERIES

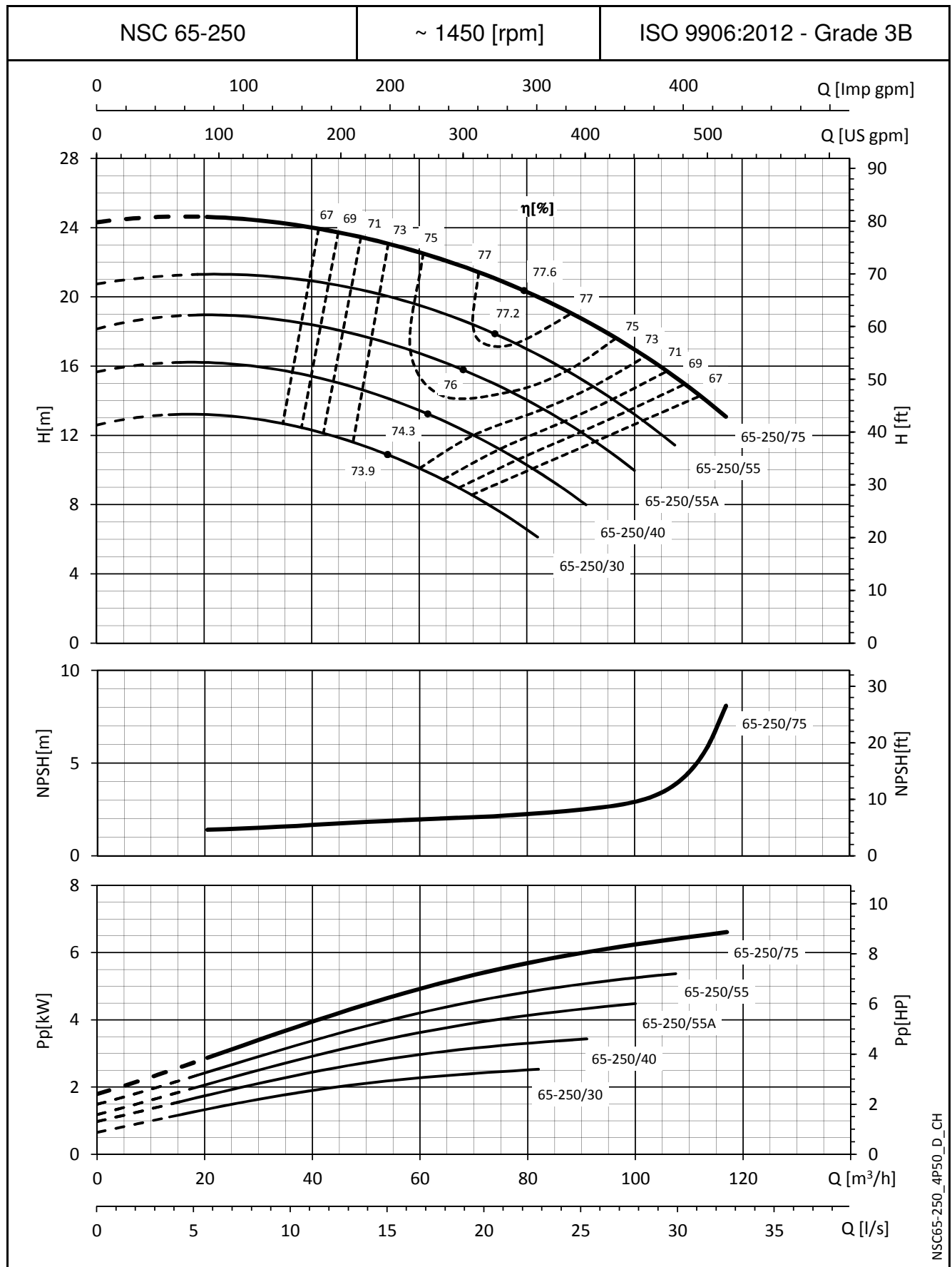
OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



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e-NSC SERIES

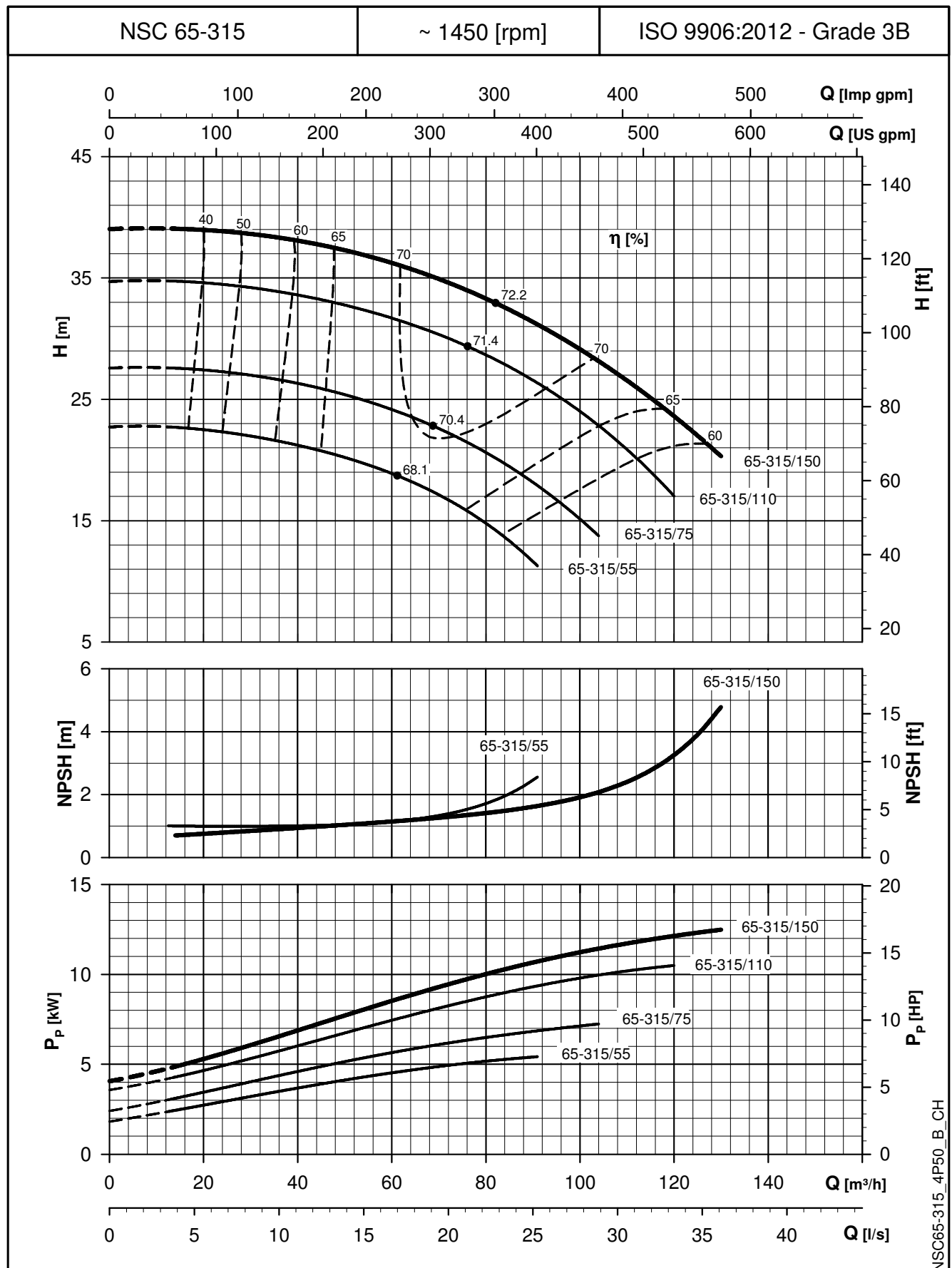
OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



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e-NSC SERIES

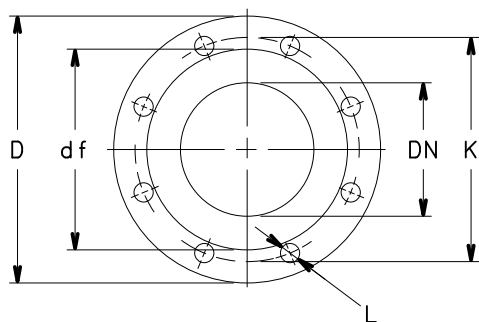
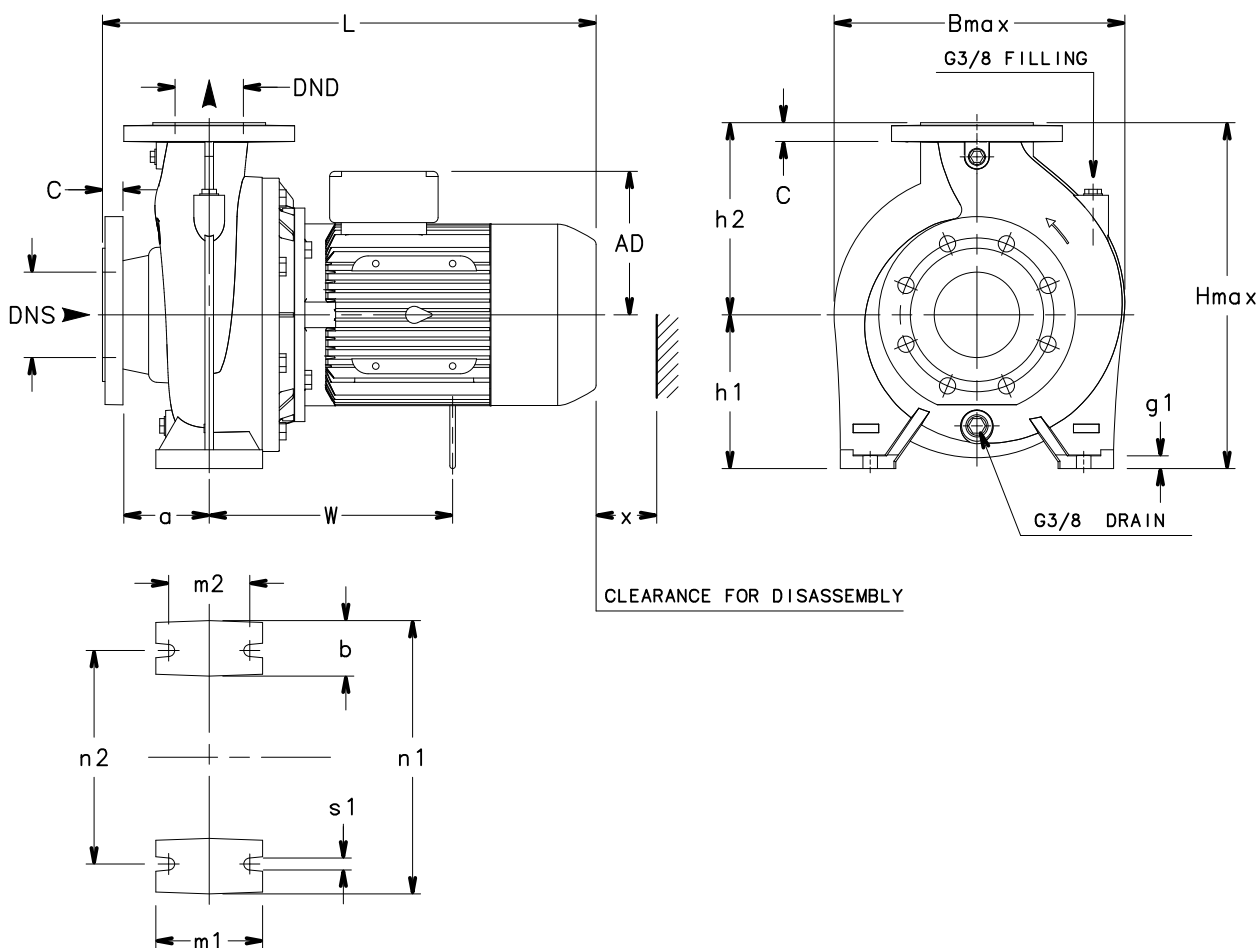
OPERATING CHARACTERISTICS AT 50 Hz, 4 POLES



The NPSH values are laboratory values; for practical use we suggest increasing these values by 0,5 m.
 These performances are valid for liquids with density $\rho = 1,0 \text{ Kg/dm}^3$ and kinematic viscosity $\nu = 1 \text{ mm}^2/\text{sec}$.

NSCE 65, 80 SERIES
DIMENSIONS AND WEIGHTS AT 50 Hz, 4 POLES

TYPE A



FLANGES

EN1092-2, PN 16 *)						ASME B16.5, Class 150 RF *)					
DN	D	K	C	df	L	DN	D	K	C	df	L
65	185	145	20	118	4x19	2 1/2	185	139.5	20	105	4x19
80	200	160	22	132	8x19	3	200	152.5	22	127	8x19
100	230	180	24	157	8x19	4	230	190.5	24	157	8x19

*) ...VALUE "C" AND "D" MAY VARY
FROM STANDARD.

NSCE 65, 80 SERIES DIMENSIONS AND WEIGHTS AT 50 Hz, 4 POLES

PUMP TYPE NSCE..4	TYPE	DIMENSIONS (mm)																		WEIGHT kg
		DNS	DND	a	AD	b	g1	h1	h2	m1	m2	n1	n2	s1	W	B max	H max	L	x	
65-125/05/S	A	80	65	100	139	65	16	160	180	125	95	280	212	14	237	300	340	465	100	40
65-125/07/X	A	80	65	100	128	65	16	160	180	125	95	280	212	14	-	300	340	433	100	44
65-125/11/P	A	80	65	100	134	65	16	160	180	125	95	280	212	14	247	300	340	500	100	50
65-125/15/P	A	80	65	100	134	65	16	160	180	125	95	280	212	14	247	300	340	500	100	53
65-160/15B/P	A	80	65	100	134	65	16	160	200	125	95	280	212	14	245	335	360	498	108	55
65-160/15A/P	A	80	65	100	134	65	16	160	200	125	95	280	212	14	245	335	360	498	108	55
65-160/15/P	A	80	65	100	134	65	16	160	200	125	95	280	212	14	245	335	360	498	108	55
65-160/22A/P	A	80	65	100	168	65	16	160	200	125	95	280	212	14	285	335	360	522	108	65
65-160/22/P	A	80	65	100	168	65	16	160	200	125	95	280	212	14	285	335	360	522	108	65
65-200/15/P	A	80	65	100	134	65	16	180	225	125	95	320	250	14	245	348	405	498	118	58
65-200/22A/P	A	80	65	100	168	65	16	180	225	125	95	320	250	14	285	348	405	522	118	68
65-200/22/P	A	80	65	100	168	65	16	180	225	125	95	320	250	14	285	348	405	522	118	68
65-200/30/P	A	80	65	100	168	65	16	180	225	125	95	320	250	14	285	348	405	553	118	71
65-200/40/P	A	80	65	100	168	65	16	180	225	125	95	320	250	14	345	348	405	582	118	90
80-160/15/P	A	100	80	125	134	65	16	180	225	125	95	320	250	14	245	340	405	523	122	65
80-160/22A/P	A	100	80	125	168	65	16	180	225	125	95	320	250	14	285	340	405	547	122	75
80-160/22/P	A	100	80	125	168	65	16	180	225	125	95	320	250	14	285	340	405	547	122	75
80-160/30/P	A	100	80	125	168	65	16	180	225	125	95	320	250	14	285	340	405	578	122	78

NOTE: Pumps with flanges according to EN 1092-2 as standard; available ASME B16.5 version on request.

nsce-65-80-4p50-en_d_td