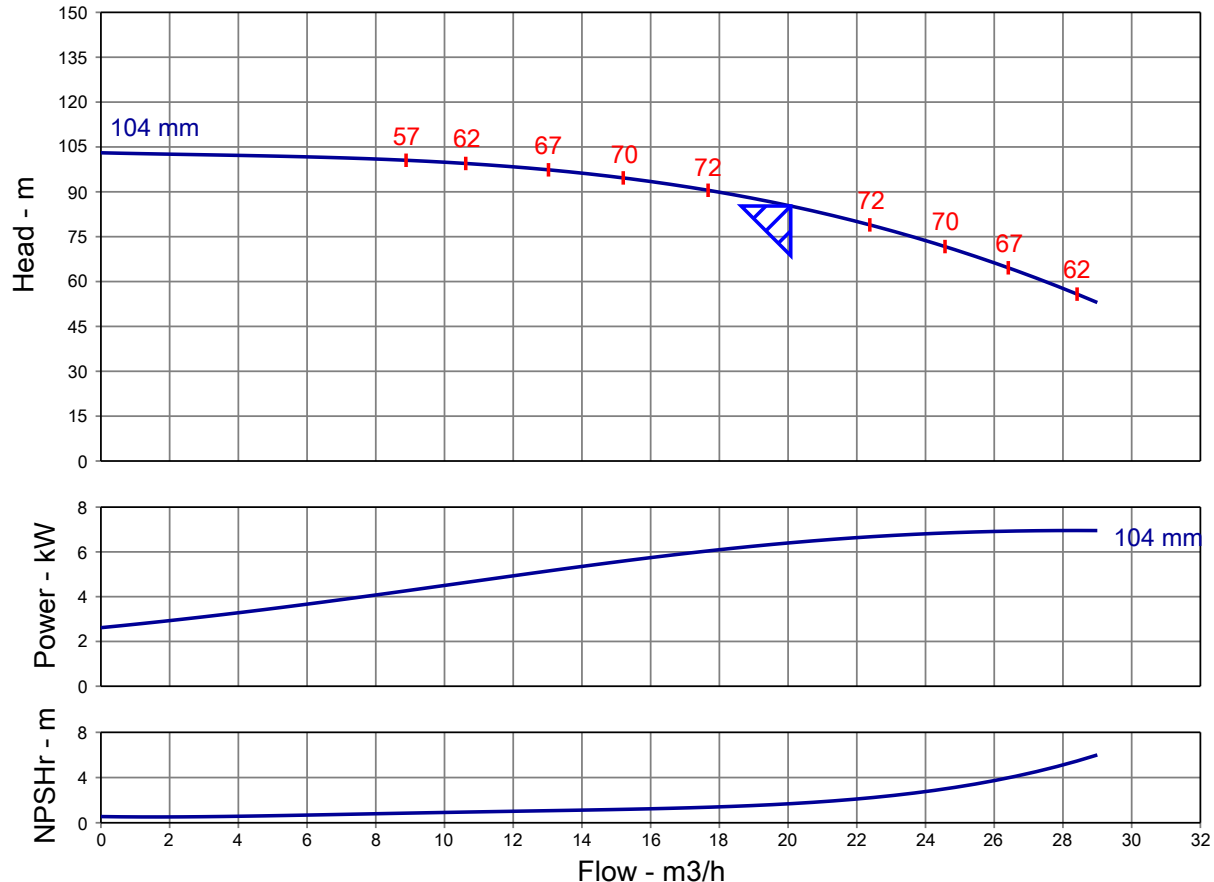


Pump Performance Datasheet

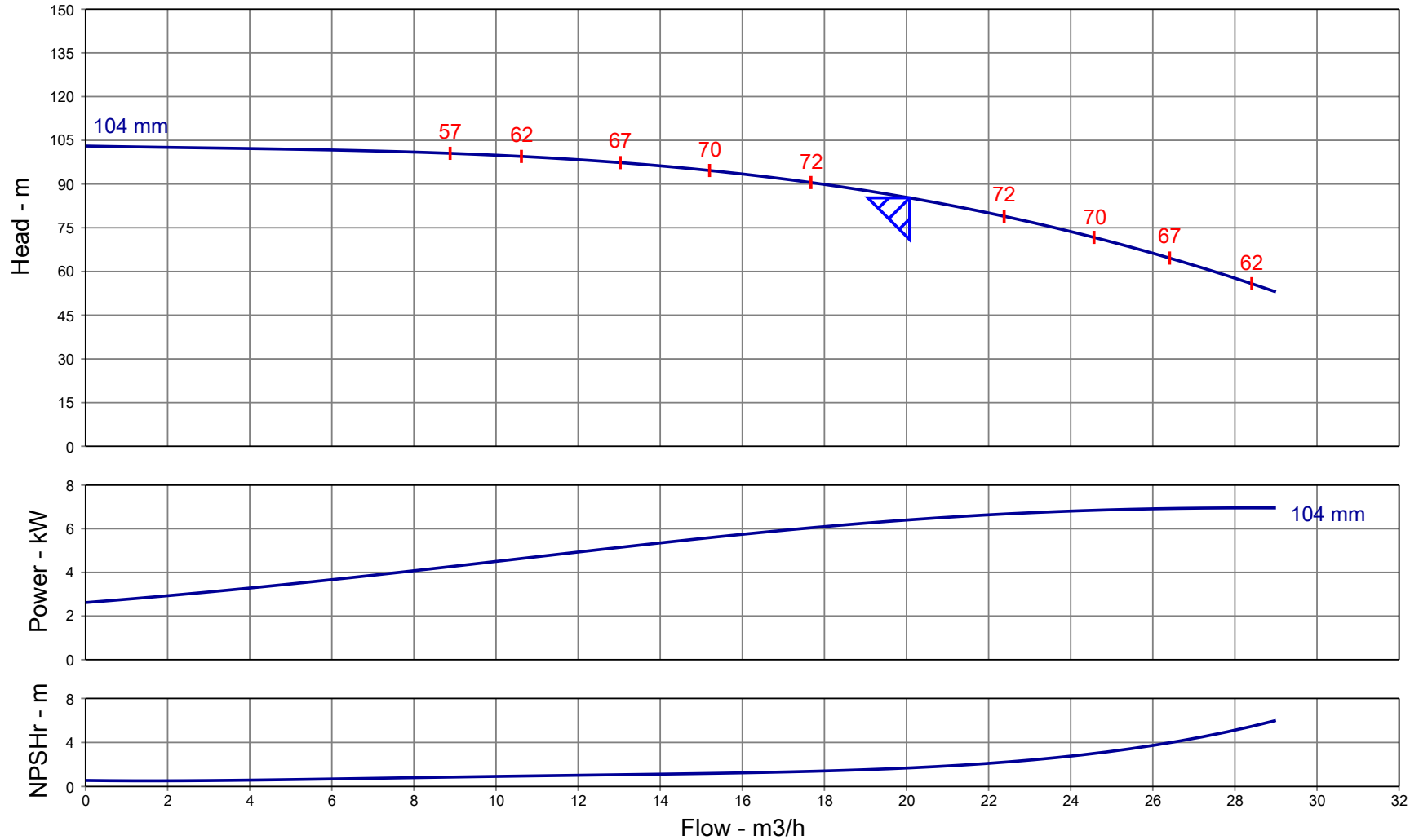
Customer :	Quote number :	Liquid
Customer reference :	Size : LCR20-07	Liquid type : Water
Item number : Default	Stages : 7	Additional liquid description :
Service :	Based on curve number : LCR20-07-2-50	Solids diameter, max : 0.0 mm
Quantity : 1	Date last saved : 17 Nov 2023 2:20 PM	Solids concentration, by volume : 0.00 %
Operating Conditions		Temperature : 20.00 deg C
Flow, rated : 20.08 m3/h		Fluid density : 0.999 / 0.999 kg/dm3
Head, rated (requested) : 85.25 m		Viscosity : 1.00 cSt
Head, rated (actual) : 85.25 m		Vapor pressure, rated : 0.00 bar.a
Suction pressure, rated / max : 0.00 / 0.00 bar.g		
NPSH available : Ample		
Site Supply Frequency : 50 Hz		
Performance		Material
Speed criteria : Synchronous		Material selected : Standard
Speed : 2900 rpm		
Impeller dia. : 104 mm		Pressure Data
Impeller diameter, maximum : 104 mm		Maximum working pressure : 10.09 bar.g
Impeller diameter, minimum : 104 mm		Maximum allowable working pressure : 16.00 bar.g
Efficiency : 72.65 %		Maximum allowable suction pressure : 10.00 bar.g
NPSH required / margin required : 1.69 / 0.00 m		Hydrostatic test pressure : 24.00 bar.g
nq (imp. eye flow) / S (imp. eye flow) : 33 / 146 Metric units		
MCSF : -		Driver & Power Data (@Max density)
Head max. : 103.0 m		Driver sizing specification : Maximum power
Head rise to shutoff : 20.87 %		Margin over specification : 0.00 %
Flow, best eff. point : 20.08 m3/h		Service factor : 1.00
Flow ratio, rated / BEP : 100.00 %		Power, hydraulic : 4.66 kW
Diameter ratio (rated / max) : 100.00 %		Power, rated : 6.41 kW
Head ratio (rated dia / max dia) : 100.00 %		Power, maximum : 6.95 kW
Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010] : 1.00 / 1.00 / 1.00 / 1.00		Motor rating : 7.46 kW / 10.00 hp
Selection status : Acceptable		

Performance based on test acceptance - ISO 9906:2012 3B. Performances are subject to periodic changes due to continuous improvements.



Pump Performance Curve

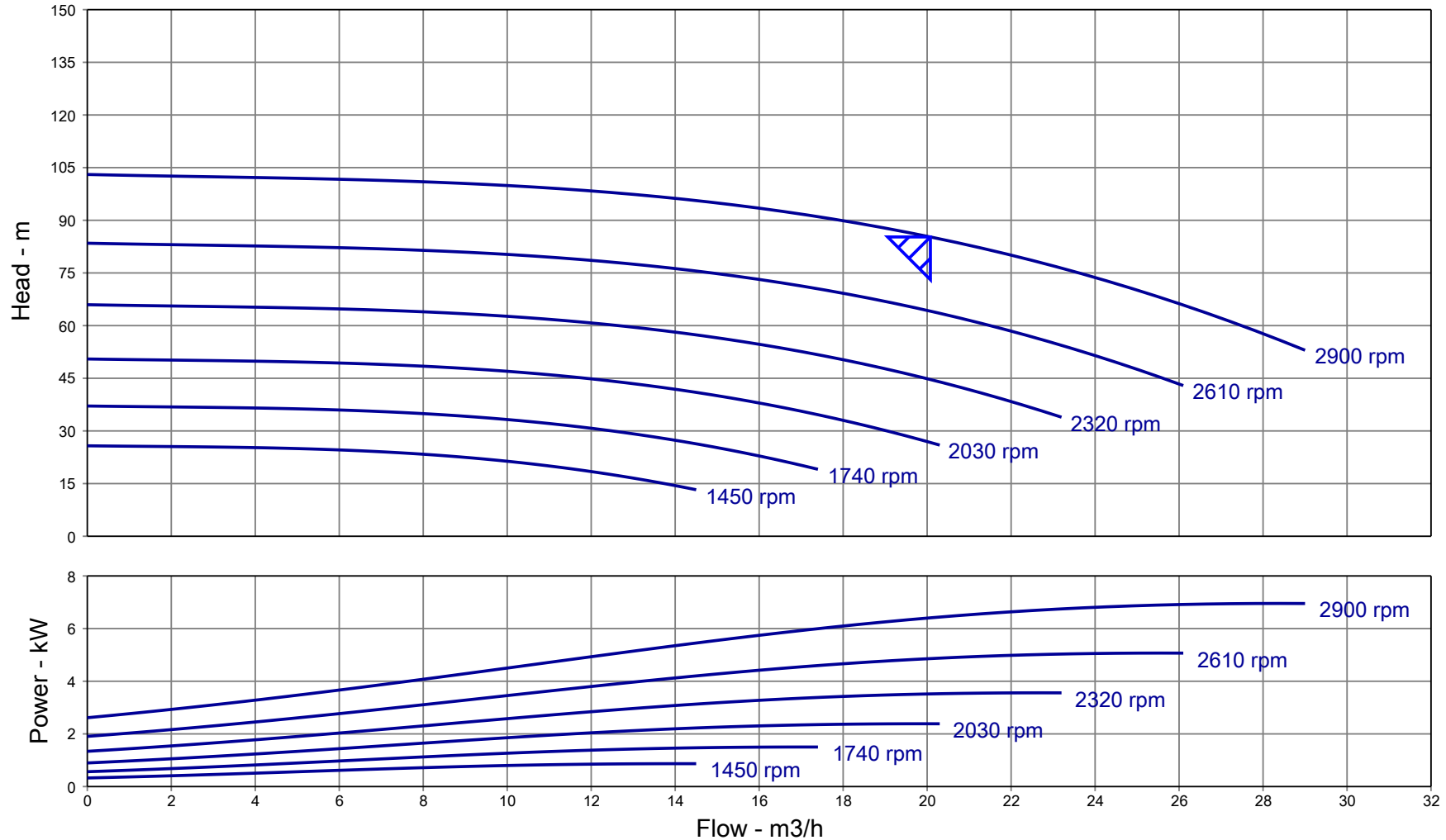
Performance based on test acceptance - ISO 9906:2012 3B. Performances are subject to periodic changes due to continuous improvements.



Customer	:	Size	:	LCR20-07	Flow, rated	:	20.08 m ³ /h
Customer reference	:	Stages	:	7	Head, rated	:	85.25 m
Item number	:	Speed	:	2900 rpm	Fluid density	:	0.999 / 0.999 kg/dm ³
Service	:	Based on curve number	:	LCR20-07-2-50	Viscosity	:	1.00 cSt
Quantity	:	Efficiency	:	72.65 %	Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010]	:	1.00 / 1.00 / 1.00 / 1.00
Quote number	:	Power, rated	:	6.41 kW			
Date last saved	:	NPSH required	:	1.69 m			

Multi-Speed Performance Curve

Performance based on test acceptance - ISO 9906:2012 3B. Performances are subject to periodic changes due to continuous improvements.



Customer :	Stages :	Nominal speed :
Customer reference :	Based on curve number :	Flow, rated :
Item number : Default	Efficiency : 72.65 %	Head, rated : 85.25 m
Service :	Power, rated : 6.41 kW	Speed : 2900 rpm
Quantity : 1	NPSH required : 1.69 m	Impeller dia. : 104 mm
Quote number :	Site Supply Frequency : 50 Hz	Fluid density : 0.999 / 0.999 kg/dm ³
Date last saved : 17 Nov 2023 2:20 PM		Viscosity : 1.00 cSt
Size : LCR20-07		Cq/Ch/Ce/Cn [ANSI/HI 9.6.7-2010] : 1.00 / 1.00 / 1.00 / 1.00

Life Cycle Cost Datasheet

Customer :	Quantity : 1	Size : LCR20-07
Customer reference :	Quote number :	Stages : 7
Item number : Default	Date last saved : 17 Nov 2023 2:20 PM	Speed : 2900
Service :		

Load Profiles and Energy Costs

Expected pump life: 20 years	Load Profile #1	Load Profile #2	Load Profile #3	Load Profile #4	Load Profile #5	Total
Flow: (m3/h)	20.08	-	-	-	-	-
Operation: (hours per year)	8,760	-	-	-	-	8,760
Energy cost, present value (\$ per kWh)	0.1	-	-	-	-	-
Speed (rpm)	2900	-	-	-	-	-
Head (m)	85.25	-	-	-	-	-
Efficiency (%)	72.65	-	-	-	-	-
Power, rated (kW)	6.41	-	-	-	-	-
Motor efficiency (%)	100.00	-	-	-	-	-
Drive/gear efficiency (%)	100.00	-	-	-	-	-
System curve	-	-	-	-	-	-
Energy, total (kWh)	1,122,834.8	-	-	-	-	1,122,834.8
Energy cost, per year	\$ 5,614.17	-	-	-	-	\$ 5,614.17
Energy cost, total present value	\$ 84,203.51	-	-	-	-	\$ 84,203.51

Life Cycle Cost Calculation

Additional Annual Costs	Additional One-time Costs, Year 0	Interest and Inflation Rates
Routine maintenance cost : 0.00	Initial investment cost : 0.00	Interest rate, % : 6.00
Repair cost : 0.00	Installation and commissioning cost : 0.00	Inflation rate, % : 3.00
Operating cost : 0.00	Other one-time costs, year 0 : 0.00	Total Net Present Value Costs
Downtime cost : 0.00	Additional One-time Costs, Year 20	Total energy cost : \$ 84,203.51
Environmental cost : 0.00	Decommissioning cost : 0.00	Total additional annual cost : \$ 0.00
Other annual costs : 0.00	Other one-time costs, year 20 : 0.00	Total additional one-time cost : \$ 0.00
Total, present value : \$ 0.00	Total, present value : \$ 0.00	Total life cycle cost : \$ 84,203.51

Pump Performance - Additional Data

Customer :	Quote number :
Customer reference :	Size : LCR20-07
Item number : Default	Stages : 7
Service :	Speed : 2900 rpm
Quantity : 1	Intellicode :
	Date last saved : 17 Nov 2023 2:20 PM

Performance Data	Stage, Speed and Solids Limits
Head, maximum diameter, rated flow : 85.25 m	Stages, maximum : 7
Head, minimum diameter, rated flow : 85.25 m	Stages, minimum : 7
Head max. : 103.0 m	Pump speed limit, maximum : 2900 rpm
Efficiency adjustment factor, total : 1.00	Pump speed limit, minimum : 1200 rpm
Power adjustment, total : 0.00 kW	Curve speed limit, maximum : 2900 rpm
Head adjustment factor, total : 1.00	Curve speed limit, minimum : 1200 rpm
Flow adjustment factor, total : 1.00	Variable speed limit, maximum : -
Flow adjustment factor, efficiency only (shift BEP) : 1.00	Variable speed limit, minimum : -
Flow adjustment factor, end-of-curve only, total : 1.00	Solids size limit : 0.0 mm

Mechanical Limits	Typical Driver Data
MCSF adjustment factor : 1.00	Driver speed, full load : 2900 rpm
NPSHR adjustment factor, total : 1.00	Driver speed, rated load : 2900 rpm
NPSHR slope correction factor : 1.00	Driver efficiency, 100% load : N/A
User applied performance adjustment comments :	Driver efficiency, 75% load : N/A
NPSH margin dictated by pump supplier : 0.00 m	Driver efficiency, 50% load : N/A
NPSH margin dictated by user : 0.00 m	
NPSH margin used (added to 'required' values) : 0.00 m	

Mechanical Limits	Typical Driver Data
Torque, rated power, rated speed : 2.21 kW/1000 rpm	
Torque, maximum power, rated speed : 2.40 kW/1000 rpm	
Torque, driver power, full load speed : 2.57 kW/1000 rpm	
Torque, driver power, rated speed : 2.57 kW/1000 rpm	
Torque, pump shaft limit : -	
Radial load, worst case : -	
Radial load limit : -	
Impeller peripheral speed, rated : -	
Impeller peripheral speed limit : -	

Various Performance Data	Flow (m3/h)	Head (m)	Efficiency (%)	NPSHr (m)	Power (kW)
Shutoff, rated diameter	0.00	103.0	-	-	2.61
Shutoff, maximum diameter	0.00	103.0	-	-	2.61
MCSF	-	-	-	-	-
Rated flow, minimum diameter	20.08	85.25	72.65	-	6.41
Rated flow, maximum diameter	20.08	85.25	72.65	-	6.41
BEP flow, rated diameter	20.08	85.25	72.65	1.69	6.41
120% rated flow, rated diameter	24.09	73.38	70.56	2.80	6.81
End of curve, rated diameter	29.00	52.99	60.12	6.00	6.95
End of curve, minimum diameter	29.00	52.99	60.12	6.00	6.95
End of curve, maximum diameter	29.00	52.99	60.12	6.00	6.95
Maximum value, rated diameter	-	103.0	72.65	-	6.95
Maximum value, maximum diameter	-	-	72.65	-	6.95

System differential pressure	@ Density, rated	@ Density, max
Differential pressure, rated flow, rated diameter (bar)	8.35	8.35
Differential pressure, shutoff, rated diameter (bar)	10.09	10.09
Differential pressure, shutoff, maximum diameter (bar)	10.09	10.09

Discharge pressure	@ Suction pressure, rated	@ Suction pressure, max	@ Suction pressure, rated	@ Suction pressure, max
Discharge pressure, rated flow, rated diameter (bar.g)	8.35	8.35	8.35	8.35
Discharge pressure, shutoff, rated diameter (bar.g)	10.09	10.09	10.09	10.09
Discharge pressure, shutoff, maximum diameter (bar.g)	10.09	10.09	10.09	10.09

Ratios	
Maximum flow / rated flow, rated diameter : 144.44 %	Head rated diameter / head minimum diameter, rated flow : 100.00 %



Pump Performance - Additional Data

Construction

Orientation	: Standard	Curve Tolerance	: ISO 9906:2012 3B.
Construction Specifications	: Standard		Performances are subject to periodic changes due to continuous improvements.