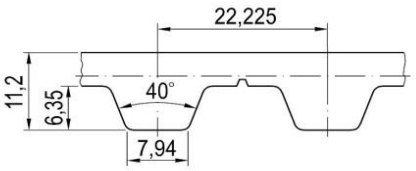
Technical Data Sheet
optibelt ALPHA LINEAR / V XH - ST
PU Timing Belt, Optionally with Fabric PAZ/PAR, Open-Ended / Endless Joined

Dimensions, Tolerances

Profile:	XH
Tooth pitch t:	7/8 in. = 22.225 mm
Total thickness:	11.2 mm
Tooth height:	6.35 mm
Tooth tip width:	7.94 mm
Tooth flank angle:	40°
Length tolerance:	± 0.5 mm/m
Width tolerance:	± 0.7 mm
Thickness tolerance:	± 0.3 mm

Construction

Polyurethane:	Thermoplastic, 92 Shore A, white
Tension cord:	steel, ø 0.9 mm
Fabric, optional:	polyamide, tooth and back, (PAZ/PAR), green



Specific nominal tensile force transmittable per tooth

Input speed n_1 [1/min]	Spec. nom. tensile force $F_{N\,spez}$ [N/mm]	Input speed n_1 [1/min]	Spec. nom. tensile force $F_{N\,spez}$ [N/mm]	Input speed n_1 [1/min]	Spec. nom. tensile force $F_{N\,spez}$ [N/mm]
0	9.400	1200	4.884	3600	3.089
20	9.064	1300	4.756	3800	2.999
40	8.783	1400	4.638	4000	2.913
60	8.542	1500	4.527	4500	2.834
80	8.330	1600	4.423	5000	2.755
100	8.142	1700	4.324	5500	2.716
200	7.426	1800	4.232		
300	6.922	1900	4.144		
400	6.534	2000	4.060		
500	6.218	2200	3.904		
600	5.951	2400	3.761		
700	5.720	2600	3.629		
800	5.517	2800	3.506		
900	5.335	3000	3.392		
1000	5.171	3200	3.285		
1100	5.021	3400	3.184	v_{max} = 40 m/s	

Nominal tensile force F_N

$$F_N = F_{N\,spez} \cdot z_{eB} \cdot b \quad [N]$$

$F_{N\,spez}$ Specific nominal tensile force transmittable per tooth [N/mm]
z_{eB} Number of teeth in mesh, driver pulley, limited to $z_{eB\,max}$
$z_{eB\,max}$ ALPHA LINEAR: 12, ALPHA V: 6
b Belt width [mm]

Nominal torque M_N

$$M_N = F_N \cdot d_{w1} / (2 \cdot 10^3) \quad [Nm]$$

$$d_{w1} = z_1 \cdot t / \pi$$

d_{w1} Pitch diameter, driver pulley [mm]
z_1 Number of teeth, driver pulley
t Tooth pitch [mm]

Nominal power P_N

$$P_N = F_N \cdot z_1 \cdot t \cdot n_1 / (6 \cdot 10^7) \quad [KW]$$

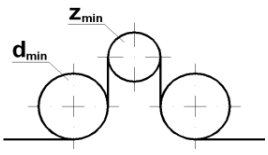
n_1 Speed, driver pulley [1/min]

Cord tensile force, minimum belt length, belt weight

Belt width [1] b [mm]		25.4	38.1	50.8	76.2	101.6	152.4
Width code		100	150	200	300	400	600
F_{Br} [N], ALPHA LINEAR		14,240	21,840	29,440	44,640	59,840	90,240
F_{zul} [N] [2], ALPHA LINEAR	εzul = 0.55%	3,560	5,460	7,360	11,160	14,960	22,560
F_{zul} [N] [2], ALPHA V		1,780	2,730	3,680	5,580	7,480	11,280
F_{zul} [N] [3], ALPHA V short joint		-	-	-	-	-	-
Min. belt length ALPHA V / s. j. [3] [mm]		-	911	911	911	911	-
Weight per metre [kg/m]		0.386	0.579	0.772	1.158	1.544	2.316

[1] Smaller and intermediate widths possible
[2] Allowable tensile force F_{zul} = 25% / 12.5 % (ALPHA LINEAR / V) of cord breaking strength F_{Br} cspez = Fzul / εzul [N]
[3] short joint - allowable tensile force 50% of F_{zul} ALPHA V

Timing belt pulleys, idlers, clamping plates



Minimum no. of teeth of the pulleys:	z_{min} = 18
Minimum pitch diameter of the pulleys:	$d_{w\,min}$ = 127.34 mm
Minimum no. of teeth in mesh, clamping plate:	$z_{CP\,min}$ = 8
Minimum- of a plane inside idler:	d_{min} = 100 mm
Minimum- of a plane outside idler:	d_{min} = 120 mm

We would be pleased to offer advice about technical characteristics and drive design as well as special requirements. Further information can be found in Optibelt documentation.