

Technical Data Sheet

optibelt ALPHA LINEAR / V H - AR

PU Timing Belt, Open-Ended / Endless Joined

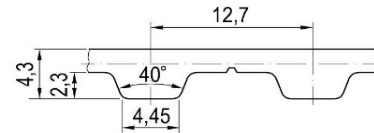


Dimensions, Tolerances

Profile:	H
Tooth pitch t:	1/2 in. = 12.7 mm
Total thickness:	4.3 mm
Tooth height:	2.3 mm
Tooth tip width:	4.45 mm
Tooth flank angle:	40°
Length tolerance:	± 0.5 mm/m
Width tolerance:	± 0.5 mm
Thickness tolerance:	± 0.3 mm

Construction

Polyurethane: Thermoplastic, 85 Shore A FDA, transparent
Tension cord: Aramid, ø 0.7 mm



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	4.600	1200	2.635	3600	1.846
20	4.456	1300	2.579	3800	1.807
40	4.336	1400	2.527	4000	1.769
60	4.232	1500	2.478	4500	1.682
80	4.141	1600	2.432	5000	1.605
100	4.059	1700	2.389	5500	1.534
200	3.748	1800	2.349	6000	1.470
300	3.528	1900	2.310	6500	1.410
400	3.358	2000	2.273	7000	1.355
500	3.220	2200	2.205	7500	1.304
600	3.103	2400	2.142	8000	1.256
700	3.002	2600	2.084	8500	1.211
800	2.913	2800	2.030	9000	1.169
900	2.833	3000	1.980	9500	1.128
1000	2.761	3200	1.932	10000	1.090
1100	2.695	3400	1.888	$v_{max} = 60\text{ m/s}$	

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]

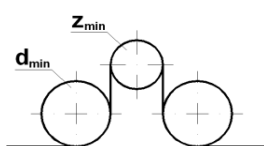
Cord tensile force, minimum belt length, belt weight

Belt width ¹ b [mm]	12.7	19.05	25.4	38.1	50.8	76.2	101.6	152.4
Width code	050	075	100	150	200	300	400	600
F_{Br} [N], ALPHA LINEAR	3650	6850	10000	15850	21700	33900	46000	70450
F_{zul} [N] ² , ALPHA LINEAR	730	1370	2000	3170	4340	6780	9200	14090
F_{zul} [N] ² , ALPHA V	365	685	1000	1585	2170	3390	4600	7045
Min. belt length ALPHA V [mm]	711	711	711	711	711	902	902	1105
Weight per metre [kg/m]	0.046	0.069	0.091	0.137	0.183	0.274	0.366	0.549

¹ Smaller and intermediate widths possible

² Allowable tensile force $F_{zul} = 20\% / 10\%$ (ALPHA LINEAR / V) of cord breaking strength F_{Br}

Timing belt pulleys, idlers, clamping plates



Minimum no. of teeth of the pulleys: $z_{min} = 14$
Minimum pitch diameter of the pulleys: $d_{w\ min} = 56.6\text{ mm}$
Minimum no. of teeth in mesh, clamping plate: $z_{CP\ min} = 8$
Minimum- of a plane inside idler: $d_{min} = 60\text{ mm}$
Minimum- of a plane outside idler: $d_{min} = 80\text{ mm}$