Technical Data Sheet

optibelt ALPHA FLEX 8M - HF

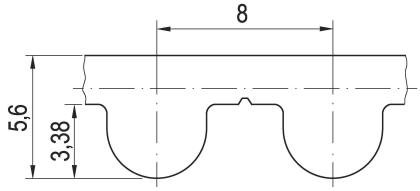
PU Timing Belt, Optionally with Fabric PAZ, Endless

Dimensions, Tolerances

Profile:	8M
Tooth pitch t:	8 mm
Total thickness:	5.6 mm
Tooth height:	3.38 mm
Length tolerance:	±0.5 mm/m
Width tolerance:	±0.5 mm
Thickness tolerance:	±0.3 mm

Construction

Polyurethane:	Thermoplastic, 92 Shore A, white
Tension cord:	Steel, high flexible, Ø 1.0 mm
Fabric, optional:	Polyamide, tooth side (PAZ), green



Specific nominal power transmittable per tooth

rpm, small idler n_k [1/min]	Spec. nom. power $P_{N\ spez}$ [W/mm]	rpm, small idler n_k [1/min]	Spec. nom. power $P_{N\ spez}$ [W/mm]	rpm, small idler n_k [1/min]	Spec. nom. power $P_{N\ spez}$ [W/mm]
0 [1]	0.000	1200	0.713	3600	1.409
20	0.019	1300	0.754	3800	1.448
40 [2]	0.037	1400	0.794	4000	1.485
60	0.055	1500	0.832	4500	1.569
80 [3]	0.072	1600 [7]	0.869	5000	1.643
100	0.089	1700	0.905	5500	1.707
200 [4]	0.168	1800	0.939	6000	1.762
300	0.239	1900	0.973	6500	1.810
400 [5]	0.305	2000	1.005	7000	1.851
500	0.366	2200	1.066	7500	1.886
600	0.424	2400	1.124	8000	1.915
700	0.478	2600	1.179	8500	1.938
800 [6]	0.530	2800	1.230	9000	1.956
900	0.579	3000	1.279	9500	1.970
1000	0.625	3200 [8]	1.325	10000	1.979
1100	0.670	3400	1.368	v_{max} = 60 m/s	

[1] $F_{N\ spez}$ [N/mm] 7.200 [2] 6.973 [3] 6.775 [4] 6.294 [5] 5.720 [6] 4.966 [7] 4.075 [8] 3.105

Nominal power P_N

$$P_N = P_{N\ spez} \cdot z_k \cdot z_{eB} \cdot b / 10^3 \quad [kW]$$

$P_{N\ spez}$	Specific nominal power transmittable per tooth [W/mm]
z_k	Number of teeth, small idler
z_{eB}	Number of teeth in mesh, small idler, limeted to $z_{eB\ max}$
$z_{eB\ max}$	12, max. allowable no. of teeth
b	belt width [mm]

Nominal torque M_N

$$M_N = P_N \cdot 9.55 \cdot 10^3 / n_k \quad [Nm]$$

n_k	rpm, small idler [1/min]

Nominal tensile force F_N

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

$$F_{N\ spez} = P_{N\ spez} \cdot 6 \cdot 10^4 / (n_k \cdot t) \quad [N/mm]$$

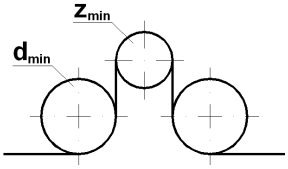
$F_{N\ spez}$	Specific nominal tensile force transmittable per tooth [N/mm]
t	Tooth pitch [mm]

Cord tensile force, belt weight

Belt width [1] b [mm]	10	15	20	25	30	50	85	100
Cord breaking strength F_{Br} [N]	4760	8320	11900	16600	20230	35600	64000	76000
Allowable tensile force [2] F_{zul} [N]	1190	2080	2975	4150	5050	8900	16000	19000
Weight per metre [kg/m]	0.064	0.096	0.128	0.160	0.192	0.320	0.544	0.640

[1] Smaller and intermediate widths possible [2] Allowable tensile force F_{zul} = 25 % of cord breaking strength F_{Br}

Timing belt pulleys, inside and outside idlers



Minimum no. of teeth of the pulleys:	z_{min} = 16
Minimum pitch diameter of the pulleys:	$d_{w\ min}$ = 40,74 mm
Plane, cylindrical idlers:	
Minimum-Ø of a plane inside idler:	not recommended, see pulley
Minimum-Ø of a plane outside idler:	d_{min} = 90 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.