

**Third Coast Training  
Performance Center**

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On 16/12/2020, a multi-stage test was performed on bicycle ergometer. Default load step duration was 3 minutes. The maximum load step was held for the entire 3 minutes.

Performance Watt	Rel. Performance Watt/kg	Heart rate bpm	Lactate mmol/L	Cadence rpm	Energy expenditure kcal/h
(Rest)	(Rest)	67	0.30		77
100	1.30	117	0.70	90	326
130	1.69	122	1.20	90	423
160	2.09	135	2.00	90	521
190	2.48	148	4.00	90	619
220	2.87	158	6.50	90	717

**The following results are obtained for training and performance diagnostics (without lactate):**

Performance at the so-called individual anaerobic threshold (p(IAT)): **172 Watt (2.24 W/kg body weight)**  
**175 Watts (78kg-std)**

Heart rate at p(IAT): **140 bpm**

Functional threshold power (FTP, according to Allen et al.): **176 Watt (2.29 W/kg body weight)**

Maximal oxygen uptake (VO<sub>2</sub>max, calculated): **3.09 L/min**

Rel. maximal oxygen uptake (VO<sub>2</sub>max, calculated) : **40.3 ml/min/kg body weight**

The p(IAT) (per kg) corresponds to the 21th Percentile (i.e. 21 percent are behind) compared to cyclists of your age group (Master 2) and the 79th Percentile within the entire male age group.

**Recommended training intensities:**

**Individual calculations for training intensities\***

Type of training	Performance	Rel. Performance	Heart rate	
Reg. Training	CZ below 96 Watt	below 1.25 Watt/kg	below 117 bpm	<span style="background-color: #d9ead3; border: 1px solid #ccc; display: inline-block; width: 10px; height: 10px;"></span>
Extensive basic training	BT1 96 Watt - 141 Watt	1.25 Watt - 1.83 Watt/kg	117 - 129 bpm	<span style="background-color: #fcf8e3; border: 1px solid #ccc; display: inline-block; width: 10px; height: 10px;"></span>
Intensive basic training	BT2 141 Watt - 166 Watt	1.83 Watt - 2.17 Watt/kg	129 - 138 bpm	<span style="background-color: #f1c40f; border: 1px solid #ccc; display: inline-block; width: 10px; height: 10px;"></span>
Threshold training	DT 166 Watt - 182 Watt	2.17 Watt - 2.37 Watt/kg	138 - 144 bpm	<span style="background-color: #d9534f; border: 1px solid #ccc; display: inline-block; width: 10px; height: 10px;"></span>

\*) Recommendations for training heart rates potentially vary with external conditions

**Supplemental data for body assessment**

Body height (ft.) / Body mass (lb.):

**5'6.0" / 169.1 lb.**

Body-Mass-Index (BMI):

**27.3**



### Cycling ergometry, Step duration 3 min

Performance Watt	Rel. Performance Watt/kg	Heart rate bpm	Lactate mmol/L	Cadence rpm	Energy expenditure kcal/h
(Rest)	(Rest)	67			77
100	1.30	117		90	326
130	1.69	122		90	423
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Legend: Prediction without lactate!

### Analysis of results

16/12/2020	
Body weight	169.1 lb.
<b>Lactate Threshold (LT):</b>	
LT	127.8 Watt
Lactate at LT (Lactate Threshold)	not provided
Heart rate at the LT (Lactate Threshold)	125 bpm
Percentage of p(LT) to p(IAT)	74 %
<b>Individual anaerobic threshold (IAT):</b>	
IAT (Lactate constant: 1.0 mmol/L)	171.6 Watt
Percentile (p(IAT)) (General population)	78.2 %
Percentile (p(IAT)) (Speed or power sports)	66.6 %
Percentile (p(IAT)) (Bicycle racing) Master 2	15.5 %
p(IAT)/kg	2.24 Watt/kg
Percentile (p(IAT)/kg) (General population)	78.8 %
Percentile (p(IAT)/kg) (Speed or power sports)	69.9 %
Percentile (p(IAT)/kg) (Bicycle racing) Master 2	20.5 %
Lactate concentration at p(IAT)	not provided
Heart rate at p(IAT)	140 bpm
p(IAT) as a percentage of p(max)	78 %
Max. glyc. Power ( VLaMax )	not provided
W'	23.6 kJ
Critical Power	191.4 Watt
VO2max (estimated)	3.09 L/min
Relative VO2(max) (calculated)	40.3 ml/min/kg
Training age	not provided
Prediction for Stelvio, IT	1:37:26 h (1118 m/h VAM)

\*\*) Mountain Time Trial Stelvio, IT ([www.strava.com/segments/15397319](http://www.strava.com/segments/15397319))

### Individual calculations for training intensities\*

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# Heart rate vs. performance

Third Coast Training

Analysis for  
(Triathlon, Long distance (Ironman))

**Note: Prediction without lactate!**

## Lactate-to-performance-curve, Cycling ergometry

