

COURSE MEASUREMENT

Drammen 5 km 2023



SUMMARY SHEET

EVENT: *Drammen 5 km*
LOCATION: *Drammen, Norway*
DATE: *2 April 2023*
Promoting Organisation: UHM Holding
Name of race director: André Hjorteseth
Email: Andrehjorteseth.privat@gmail.com
Distance: *The course is not less than 5,000 m*
Measured by *Peer Jensen, Denmark*
Date: *1 April 2023, 05:05-06:35*
Measurement method: *Jones counter mounted on bicycle wheel*
Elevation, if not same, of: START 0 m FINISH 0 m
Distance, in a straight line, between start & finish: *100 m*

Description of the Course

Terrain: *nearly flat*
Race surface: *tarmac roads*
Course configuration: *point to point.*
Start point: *Schwartz gate, at grating just after "Drammenshallen" – see photos*
Finish line: *Schwartz gate off small street – see photos*
Turning point: *Nedre Eikervei at lamppost 10 m after no 1 and 30 m after Grensegata, see photos*

Measurement Details

Section of road available: *On Bjørnstjerne Bjørnsons gate and on Kreftings gate only the right part of the southern part of the road is available for the runners. On all other roads all the road is available, but only the right part, because the runners meet each other. Cones will be placed in the middle of the road.*
Line to be taken at turns: *Shortest possible route. The runners must stay on the car roads. They may not use the pavements. Cones will be placed at turns.*

SIGNED: ... *Peer Jensen* DATE: *2023-04-01*

STEEL TAPING DATA

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For measuring a calibration course

Name of calibration course: Bjørnstjerne Bjørnsons Gate
City/town and State: Drammen, Norway
Date: 30 marts 2023
Start time: 16:30
Finish time: 17:20
Pavement temperature: Start 1 °C Finish 1 °C Average 1 °C

Measurements and calculations:

First measurement. 50.00 m x 6 + 7.79 cm = 307.79 m
Second measurement. 50.00 m x 6 + 7.78 cm = 307.78 m
Average raw (uncorrected) measurement of course: 307.785 m
Temperature correction.
Correction factor = $1 - (19 * 0.0000115) = 0.9997815$

Final (adjusted) length of calibration course $307.785 * 0.9997815 = 307.72$ m

Calibrations

Pre-measurement

Date/Time 1 April 2023 04:35
Temp. -4 °C, no clouds, weak wind

Start	End	Reading
354500	358464	3964
358500	362464	3964
362500	366464	3964
366500	370464	3964

Average 3464

Working Constant 12881.84/km
+ 1 ‰ 12.88/km
Pre-measurement constant 12894.72/km

Post-measurement

Date/Time 29 May 2022 06:45
Temp -6 °C, sunny, weak wind

Start	End	Reading
510500	515464	3964
515500	519464	3464
519500	523463	3463
523500	527465	3465

Average 3464

Working Constant 12881.84/km
+ 1 ‰ 12.88/km
post-measurement constant 12894.72/km

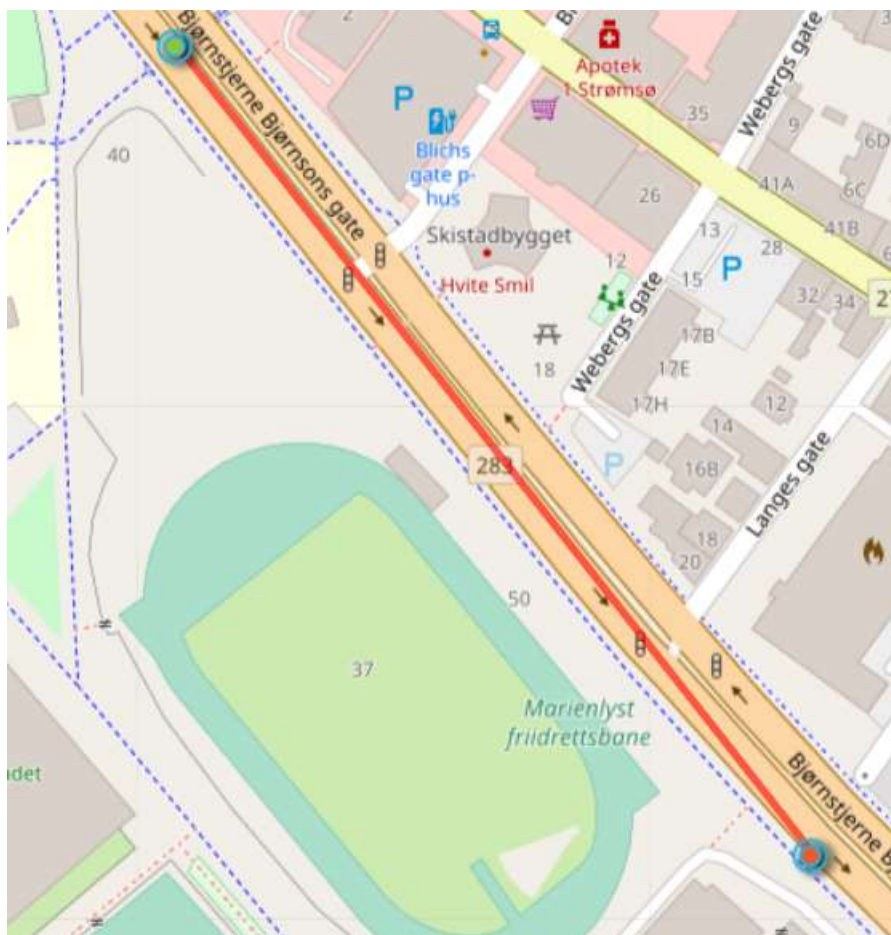
Measurement working constant: **12895/km**
Constant for the Day (average): **12895/km**

CALIBRATION COURSE MAP

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Calibration course 307.72 metres

Distance to start point 200 metres

MEASUREMENT PROCEDURE

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Measurement working constant: **12895/km**
Constant for the Day (highest): **12895/km**

Measurement of the course:

I measured in running direction from start to finish and stopped every km.

Race director took photos. I also stopped at a fixpoint to find the 5 km turning point.

05:05

Counter	Counts	Distance	Fix point
373200	0	0.00 m	Start line
386095	12895	1,000.00 m	
398990	12895	2,000.00 m	
410550	11560	2,896.50 m	At sign "Pulsesvingen"
411885	1335	3,000.00 m	
424780	12895	4,000.00 m	
437675	12895	5,000.00 m	
450570	12895	6,000.00 m	
463465	12895	7,000.00 m	
476360	12895	8,000.00 m	
479945	3585	8,278.00 m	At sign "Pulsesvingen"
489255	9310	9,000.00 m	
502150	12895	10,000.00 m	

Measured distance from start to fixed 5 km turning point	2,896.50 m.
Measured distance from fixed 5 km turning point to finish line	1,722.00 m.
5 km course	4,618.50 m

The 5 km course is missing $5,000 - 4,618.50 \text{ m} = 381.50$ meters

That means that the real turning point needs to be moved $381.50/2 = 190.75$ meters from the fixed turning point.

**$190.75 \text{ meters} = 190.75 * 12,895 = 2,460$ counts, which I measured from the fixed turning point
 $550000 + 2460 = 552460$**

Photos of start area

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Start line: **Schwartz gate at grating after “Drammenshallen”**

MAP of turning point

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Photos of finish line

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MAP of the course

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