

# Norwegian Athletic Federation

Ullevaal stadion  
Sognsveien 75 J, 0840 Oslo, NORWAY  
E-mail: [friidrett@friidrett.no](mailto:friidrett@friidrett.no)  
Phone: +47 94 83 33 26

Solastranden – 21 km  
Sola, Norway  
13.January 2024

## COURSE MEASUREMENT REPORT

### - REPORT FOR INTERNATIONAL CERTIFIED COURSE –

INFORMATION ABOUT EVENT AND COURSE
<b>Event:</b> Solastranden 21 km
<b>Technical Organiser:</b> Spirit Friidrettsklubb
<b>City/Place:</b> Sola, Norway
<b>Date of Arrangement:</b> 13.January 2024
<b>Date and time for measurement:</b> 27.December 2023 - 11 am
<b>Measured distance(s):</b> 5 km – 10 km – 21 km – <b>This report is for 21 km</b>
<b>Length of calibration course:</b> 300 m
<b>Terrain:</b> Flat <input type="checkbox"/> Slightly hilly <input checked="" type="checkbox"/> Hilly <input type="checkbox"/> Terrain <input type="checkbox"/>
<b>Type of course route:</b> Closed loop <input checked="" type="checkbox"/> Back and forth <input type="checkbox"/> A to B <input type="checkbox"/> Other <input type="checkbox"/>
<b>Race surface:</b> Asphalt
<b>Elevation Start - Finish:</b> 0
<b>Description of start:</b> Sola Strandhotel – Nordsjøvegen, outside hotel
<b>Description of finish:</b> Sola Strandhotel – Outside main entrance
<b>Distance, in a straight line, between start &amp; finish:</b> 100 m
<b>Start and Finish marked:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<b>Km-markings:</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
<b>Measurement direction:</b> Running direction <input checked="" type="checkbox"/> Opposite running direction <input type="checkbox"/>
<b>National record can be approved:</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

CONTACT INFORMATION		
	<b>Measured by:</b>	<b>Organizer:</b>
<b>Contact person:</b>	Erling Hiorth	Einar Søndeland
<b>Phone:</b>	+47 91337338	+47 92403587
<b>Email:</b>	Erling.hiorth@gmail.com	Einar.sondeland@spirit-friidrett.com

It is hereby confirmed that the course has been measured by an A- or B certified international certified course measurer from Norwegian Athletics. The course is measured in accordance with AIMS and Norwegian athletics regulations, and the distance(s) has the minimum reported length(s). The survey is valid for 5 years, except if the route is changed.

29.December 2023     *Erling Hiorth*

Date	Signature by Course measurer	Date	Signature by AIMS
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CALIBRATION COURSE AND PROCEDURE – 15.Dec.2023 – 2 pm	
Length of measuring tape (steel measuring tape only)	50 m
Length of calibration course 1st measurement	300,00 m
Length of calibration course 2nd measurement	299,975 m
Possible 3rd measure (max. 1 cm diff per 100m 1 <sup>st</sup> and 2 <sup>nd</sup> )	No
Average of measurements before adjustments	299,988 m
Temperature (road or measuring tape)	7 degree
Adjustment cf. $D-(D*(1+(temp-20)*0,0000115))$	- 0,045 m temp
Measured calibration distance after adjustment	300,013 m (+7 cm on ground)
Distance from start/finish to calibration distance	300 m

CALIBRATION INFORMATION - (max 8 counts difference of 1000 m between 4 measurements, ie 2 counts of 300m and 3 count of 400m)						
	Pre-measurement:			Post measurement:		
	Date and Time: 27.Dec – 10 am			Date and Time: 27.Dec – 2 pm		
	Start	End	Diff.	Start	End	Diff.
1st measure	47400	50863	3463	33800	37262	3462
2nd measure	50863	54328	3465	37262	40725	3463
3rd measure	54328	57791	3463	40725	44187	3462
4th measure	57791	61256	3465	44187	47650	3463

	Pre measurement	Post measurement	
Average (1+2+3+4) / 4	3464	3462,5	Today's constant. Either highest or average of before and after measurement
Constant 1 km	11546,18	11541,18	
Addn. +1‰	11,546	11,541	
Measurement constant (rounded)	11557,7	11552,7	11556

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MEASUREMENT PROCEDURE		
Measurement constant	11556	
Measured Distance	Counter	Description of place
	83700	Pre-set start line
21.070,3	327188	Fixed finish line
21.070,3 m		Total measured without adjustments
+ 31 m	Steel tape	Moved starting line backwards
+ 31,0 m		Total measured adjustments
21.101,3 m		Total measured course

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## CONCLUSION OF MEASUREMENT

1. General information about race course and start/finish
  - Finish line for all 3 distances are in front of the hotel
  - Start line is on the road outside the hotel
  - The course consist of 3 loops and has been used over the last years
2. Measurement of calibration course
  - 300 m in straight line from finish, straight/flat cycle path on asphalt
  - Measured in accordance with procedure, 2 persons
  - Marked at both ends, adjusted for temperature and adjusted +7 cm on ground
3. Calibration of bicycle
  - Calibrated in accordance with procedure, 4 measures, deviation 2 count ok
4. Measurement of the course
  - From pre-set start to finish continuous
5. Post calibration of bicycle
  - Same procedure, 4 measures, deviation 1 count ok
6. Course adjustments
  - Start line moved 31 m backwards to increase the course length
7. Overall length of the course
  - The course is not shorter than half marathon
8. Additional info
  - The organizer will set up fences on one corner / 90 degree turn – see picture
  - The race follows the street first 100 m. The rest of the course is on cycle paths.

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## CALIBRATION COURSE MAP with start & finish

### Solastranden



### Start



### Finish



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## COURSE MAP & DESCRIPTION

Solastranden Hotel and Sola Airport



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Corner with fences / cones at 11,2 km



Turning point @ 6 km



Towards finish line – last 100 m

