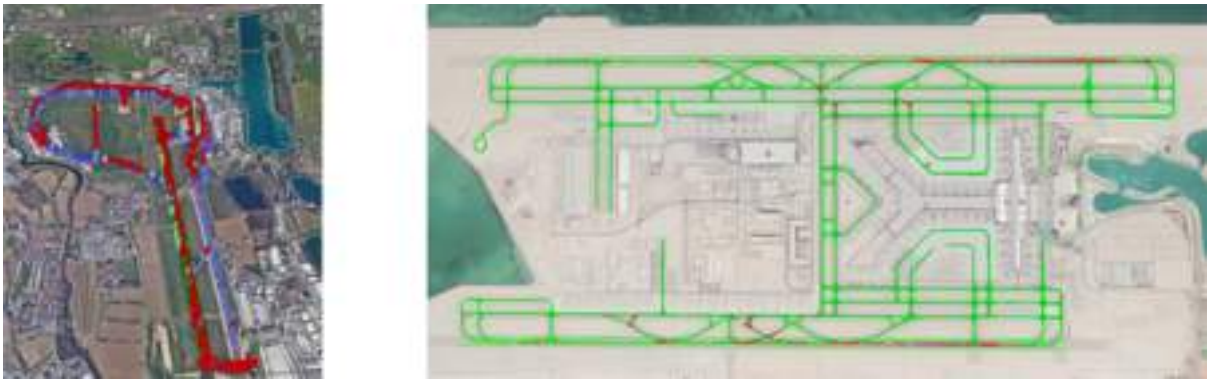
Testing Markings on Airport Runways and Taxiways

How to measure the retroreflectivity of airport markings on runways and taxiways whilst meeting essential safety and quality guidelines.

Airport Marking Measuring Standards

As with road markings, airport markings are essential for safety, and require periodic checks to ensure their quality. In USA, the Federal Aviation Authority (FAA) published guidelines in 2014 entitled 'Standards for Specifying Construction of Airports' (FAA Advisory Circular AC 150/5370-10G [1]). In particular, Item P-620 Runway and Taxiway Marking. In this circular, it is stated that retroreflectivity shall be measured by a portable retroreflectometer according to ASTM E1710; and the practices in ASTM D7585 shall be followed for taking retroreflectivity readings with a portable retroreflectometer and computing measurement averages. The circular states that a van-mounted (dynamic) retroreflectometer may also be used.



ZDR6020 Retroreflection results from airports in Europe (left) and Middle East (right) superimposed on maps. The green/red/blue colours indicate different retroreflectivity ranges.

Measuring Retroreflection with the Zehntner ZDR6020

Zehntner ZDR6020 is a dynamic instrument for measuring retroreflection. It can be mounted on a car or van and measures retroreflection of road markings as it is driven past them. The vehicle can move at normal speed, up to 150km/h. The results from Zehntner ZDR6020 are equivalent to those from a static instrument, as documented in a report by StrausZert [2].

A static instrument is useful for airports where testing is not required frequently and/or where the airport area is very small so can easily be tested by walking around with a static instrument. For most airports, however, frequent testing is required and the area is very large, making the use of static instruments very time-consuming. For these airports, a dynamic instrument, is the better choice.

Zehntner ZDR6020 is able to measure the retroreflectivity of three lines simulateneously. This is important for airports since such line patterns are common.



Example of a road with triple road markings (left) and the results as seen live on ZDR6020 software (right).

References

[1] Standards for Specifying Construction of Airports - Item P-620 Runway and Taxiway Marking

[2] Strauszert certificate. Test Certificate No. 0913-2009-05 of the suitability of the dynamic retroreflectometer ZDR 6020 for the dynamic measurement of the coefficient of retroreflected luminance RL of road markings.

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