

# RanLOS BeamForce 8

RanLOS BeamForce 8 is the ideal equipment for testing devices such as smaller base stations and terminals at higher frequencies. Sold stand-alone or together with a small test chamber.



Smart solution  
for testing  
smaller devices

## Key features:

---

Compact far field over-the-air (OTA) test system based on the Random Line-of-Sight technology

---

High performance versus price

---

Antenna and OTA performance measurements

---

Comes with RanLOS BeamLab for fast and easy testing

---

The RanLOS BeamForce 8 test system consists of a cylindrical reflector fed by a dual polarized passive linear antenna array. The system provides two operational modes: Passive for antenna radiation pattern measurements and active for communication performance testing, for example throughput.

RanLOS also provides an advanced measurement software, RanLOS BeamLab, for controlling instruments and positioners. Visualization in 1D, 2D, 3D, and analysis of measurement data can conveniently be done directly in the software. Several instruments, turntables and other test equipment are compatible with the RanLOS BeamForce 8 which enables quick and easy handling of the total test setup.

In summary, RanLOS BeamForce 8 is a smart solution for testing smaller devices in an affordable way.

# Specifications

## RanLOS BeamForce 8

Frequency range <sup>1)</sup>		27 GHz to 28.7 GHz
Polarization	Feed antenna	Dual polarized
RF connectors	Feed antenna	2 × 2.92 mm (female)
Impedance	Feed antenna	50 Ω
Quiet zone quality		
STD (cylindrical volume) <sup>2)</sup>	Amplitude	< 1.2 dB
STD (cylindrical volume) <sup>2)</sup>	Phase	< 10°
Peak-to-peak (parallel line) <sup>3)</sup>	Amplitude	< 4 dB
Peak-to-peak (parallel line) <sup>3)</sup>	Phase	< 40°
Dimensions	D x H x W	0.4 m x 0.7 m x 0.8 m
Weight		Approx. 20 kg

1. The frequency range can be expanded by exchanging the antenna array.
2. The standard deviation is calculated in a cylindrical test volume with  $d = 0.3$  m,  $h = 0.2$  m, and  $p = 0.3$  m, see the figure on next page.
3. The peak-to-peak variation is calculated along a parallel line with width with  $d = 0.3$  m at  $p = 0.3$  m, see the figure on next page.

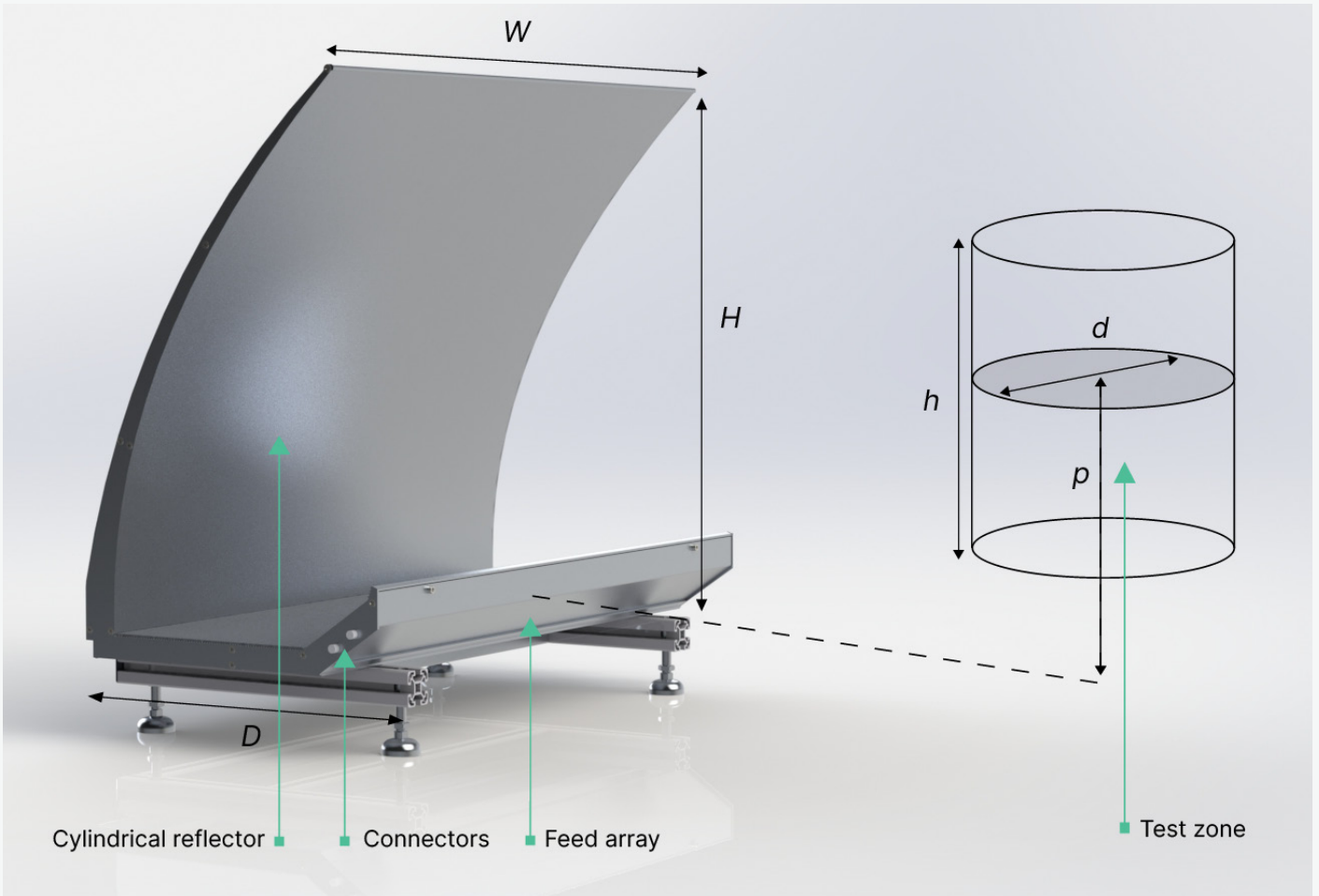
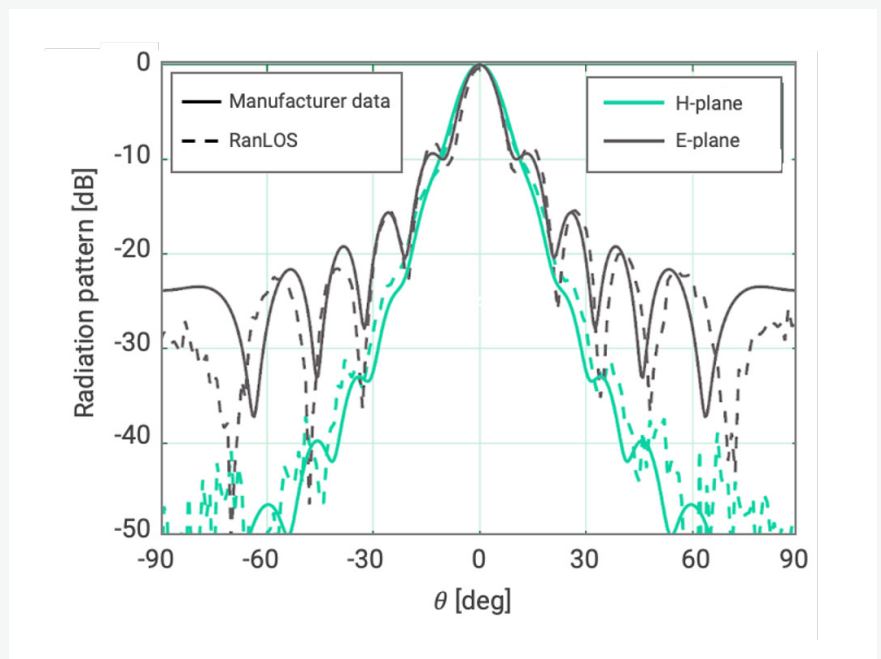


Figure related to specifications

## Measurement comparison

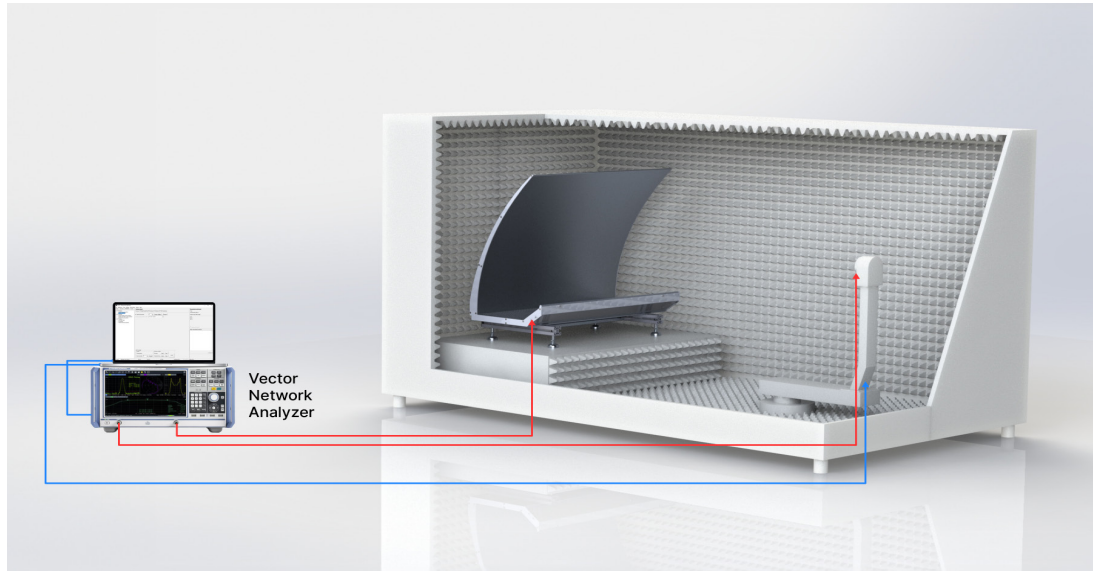
Measurements of a standard gain horn antenna. Comparison between measurements using the RanLOS BeamForce 8 and data from antenna manufacturer.



# Measurement setup

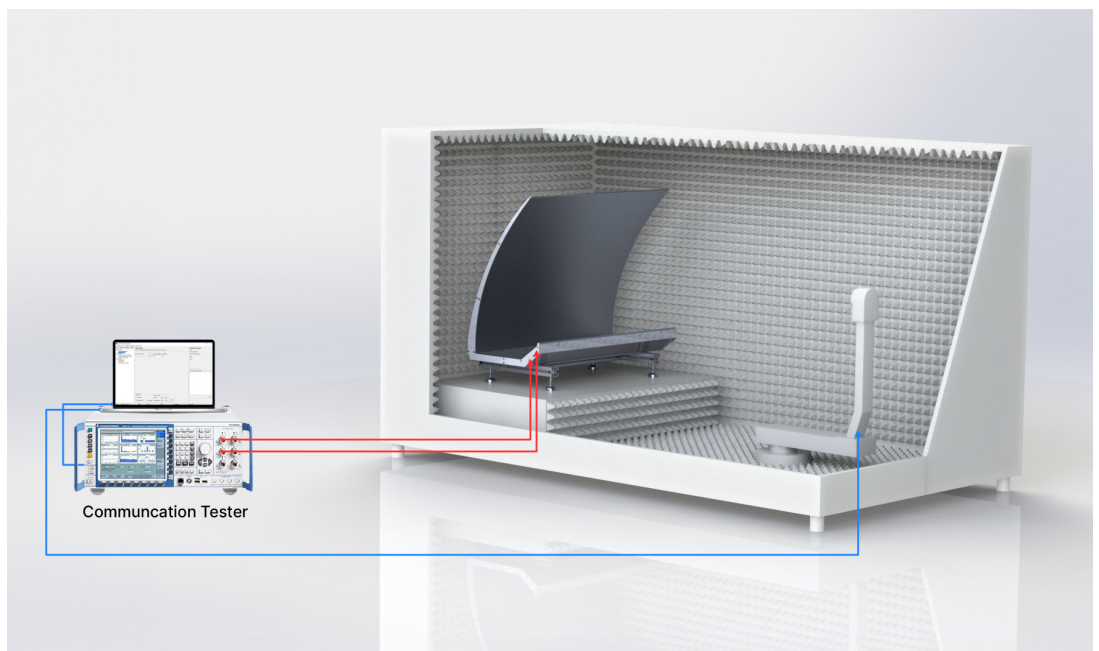
## Antenna performance measurements

The setup for antenna performance measurements uses a Vector Network Analyzer to collect the data. The instrument and turntable are controlled by RanLOS BeamLab. It is possible to measure both polarizations simultaneously, by using a 4-port instrument.



## OTA communications performance measurements

The setup for OTA measurements uses a communication tester that acts as the base station and feeds the dual polarized antenna array. The instrument and turntable are controlled by RanLOS BeamLab. Up to 2x2 MIMO measurements can be performed using a single RanLOS BeamForce 8.



This version was updated 2024-03-06

We leave a reservation for any incorrections.  
The material in this publication is subject to change without notice.



## About RanLOS:

RanLOS is an innovative provider of OTA test solutions for full-vehicle connectivity and antenna testing. The company was founded in 2016 by Professor Per-Simon Kildal, one of the world's most influential antenna experts. Professor Kildal also founded the companies Bluetest and Gapwaves. RanLOS has its origins from Chalmers University of Technology in Gothenburg, Sweden, and is listed on Nasdaq First North Growth Market.

RanLOS aims to provide customers with the most cost-effective and easy-to-use OTA test solutions. The patented hardware and proprietary software are based on several years of research and are designed to test all relevant standards such as 4G, 5G, Wi-Fi, and V2X.

