



Technical specification

General Specifications

Mode of operation	Point-to-Point / Point-to-Multipoint
Standards compliance	ITU-T G.9991 (G.vlc)
Transmission mode	TDMA with dynamic bandwidth allocation
Modulation	OFDM
Latency	< 3 ms
Network protocol	Ethernet (100/1000Base-T LAN interface)
Network connections	M12 8-pin, X-coded connector (Female connector)
LED indicators	Power On and Data Communication
Security	128-bit AES CCMP Encryption
Management	GUI based Web-Interface
Quality of Service	Packet prioritization (8 levels)
Optical transmitter	Infrared LED
Wavelength	940 nm
LED power classification	Photobiological safety Risk Group 0 (Risk Group Exempt) EN 62471:2009
Transmit angle	(FWHM) 10 degrees
Receive angle	(FWHM) 17 degrees
Device powering	Power over Ethernet IEEE 802.3af PoE (Type 1)
Power consumption	< 5 W (full traffic load)

Operating temperature	-25°C to +55°C
Protection class	IP66/IP67
Dimensions	(LxWxH) (143 x 99 x 37) mm, (5.6 x 3.9 x 1.4) inch incl. fixation brackets.
Weight	430 g (15.1 oz.)
Regulatory compliance	FCC CFR 47 Part 15B, CE Mark

Performance parameters

Operating distance	0.7 m - 20 m
Max data rate	528 Mbit/s (half duplex)
<p>Note: All data rates specified in this document are defined as throughput based on TCP/IP transmission, unless otherwise noted.</p> <p><i>Measurement conditions:</i></p> <ul style="list-style-type: none"> • 2.00 m distance between both Trulifi 6014.01 units • Trulifi 6014.01 units are perfectly aligned 	

Ordering information

A Trulifi 6014.01 system consists of a 6014.01 Access Point and 6014.01 End Point. NMC, alignment and fine-adjustment options are sold separately.

Trulifi 6014.01 Access Point APMB	Ordering code 912500104193
Trulifi 6014.01 End Point EPMB	Ordering code 912500104194
Option: Laser pointer for optical alignment	Ordering code 912500104197
Option: Fine-adjuster for alignment, compatible with adapter plate RAM-246U	Ordering code 912500104198
Available from RAM Mount: Wall mount	Ball Plate Adapter RAM-246U Socket Arm RAM-201U-B Drill down base RAM-202U
Option: Networking Monitoring and Control	Trulifi 6800.00 Controller Unit Trulifi 6800 Controller Application Trulifi 6800 NMC license

Data rate

The data rate depends on the distance d between a Trulifi 6014 Access Point and an End point, as depicted in Figure 1.

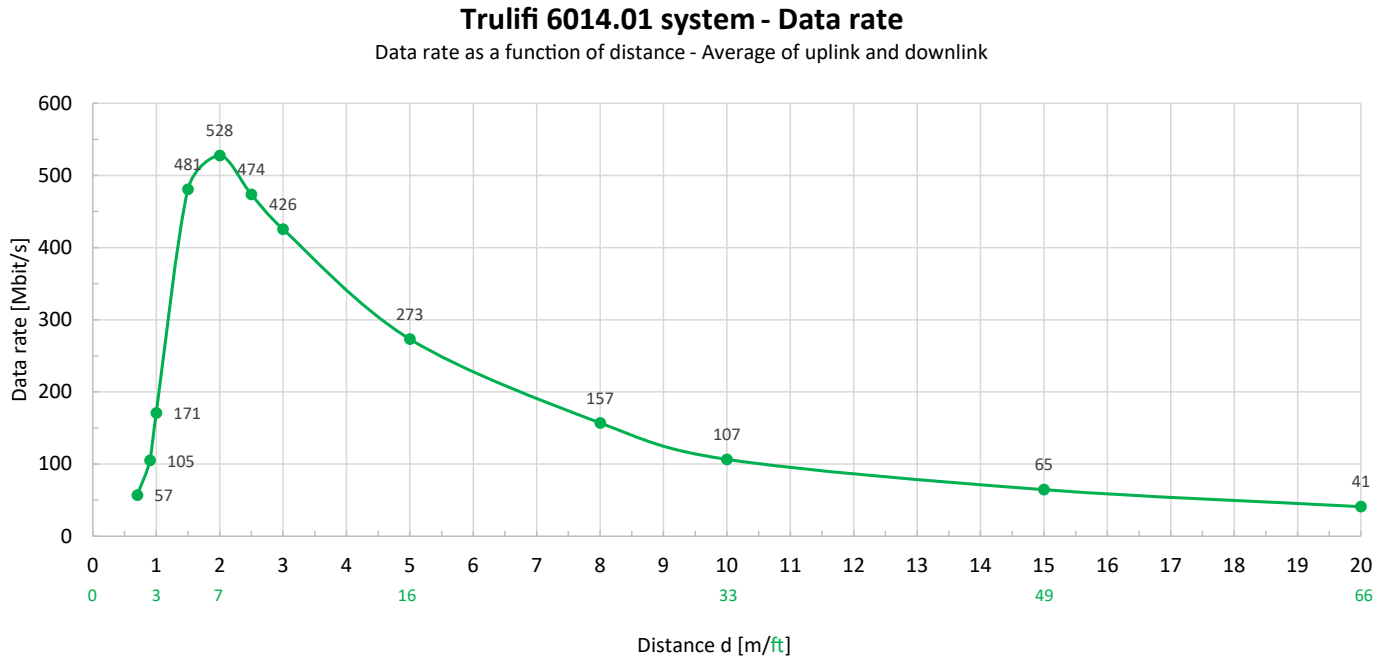


Figure 1: Data rate

Coverage area

The coverage area is defined as the area where a LiFi connection between two 6014 units can be established. The coverage area is a circle of which the radius depends on the distance d . Figure 2 illustrates how the radius depends on the distance d . The maximum data rate is achieved straight under the transmitting 6014 unit ($r = 0$) and decreases with increasing radial offset r , as illustrated in Figure 3.

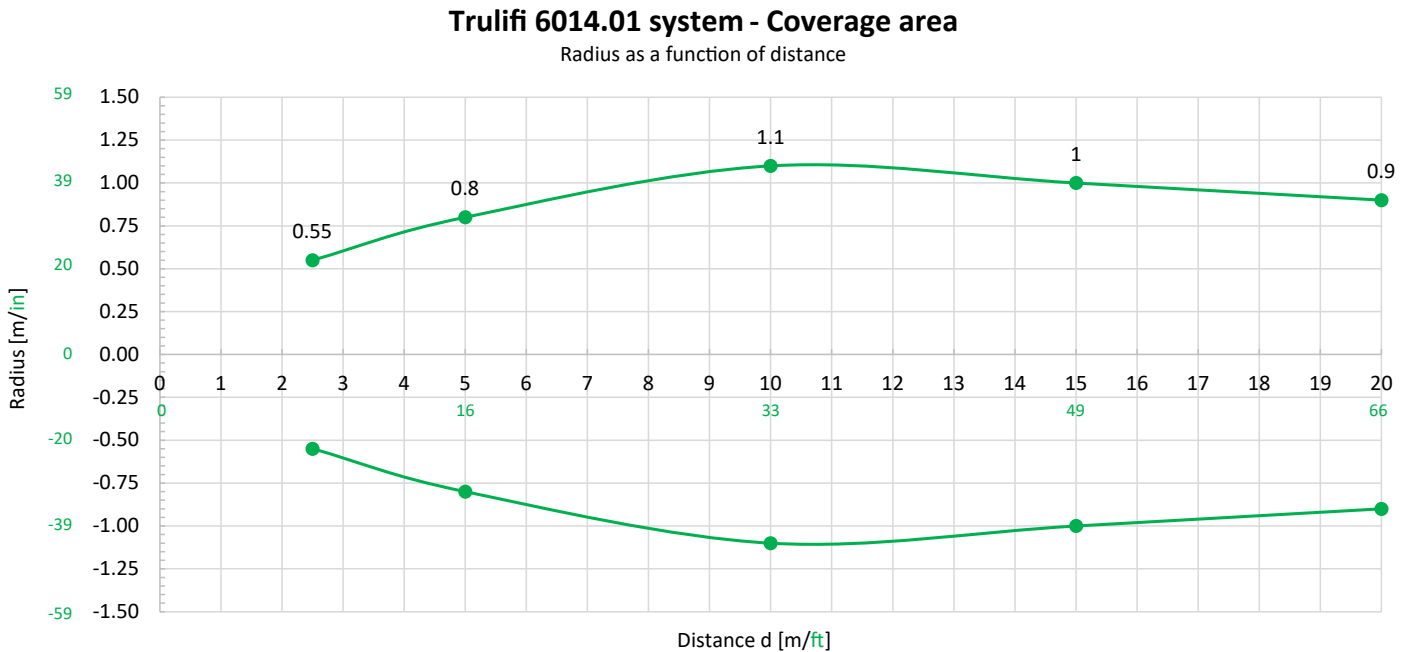


Figure 2: Coverage area

Trulifi 6014.01 system - Data rate

Data rate as a function of radial offset

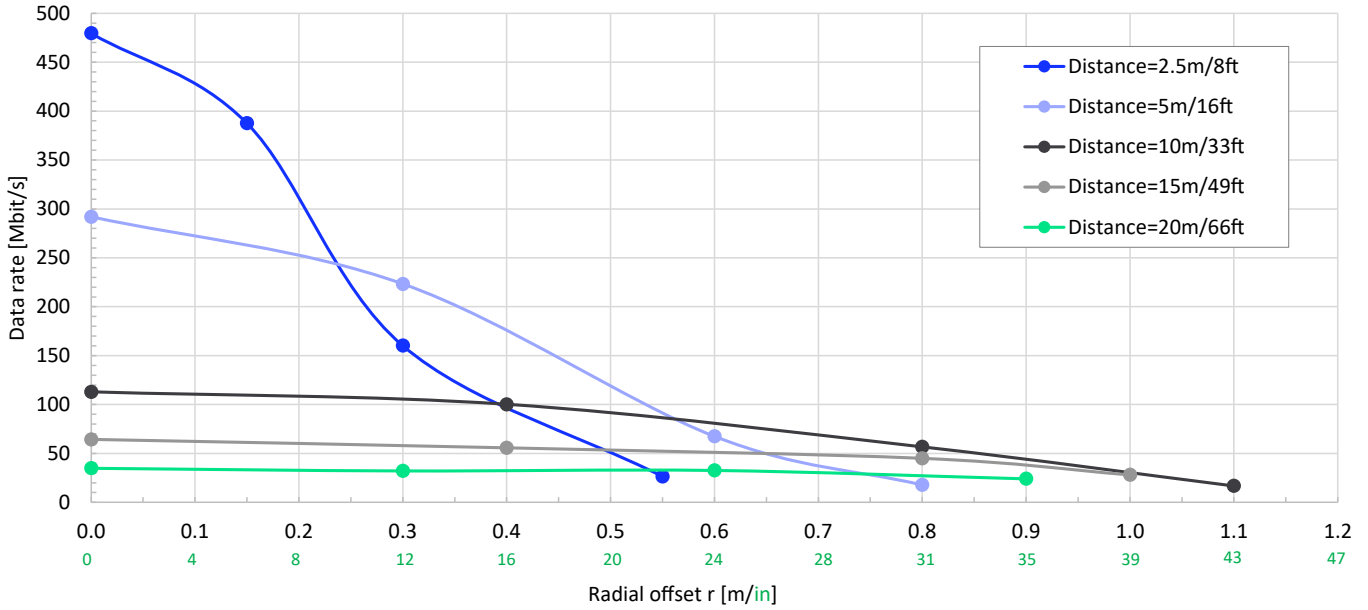


Figure 3: Data rate as a function of radial offset

Rotation

The data rate depends not only on the distance d and the radial offset r , but also on how well both units are aligned with respect to the optical central axis. Any misalignment resulting in a rotation angle greater than zero will result in a decrease of data rate. Figure 4 illustrates the measurement setup. Figure 5 displays the data rate as a function of the rotation angle for 3 different distances.

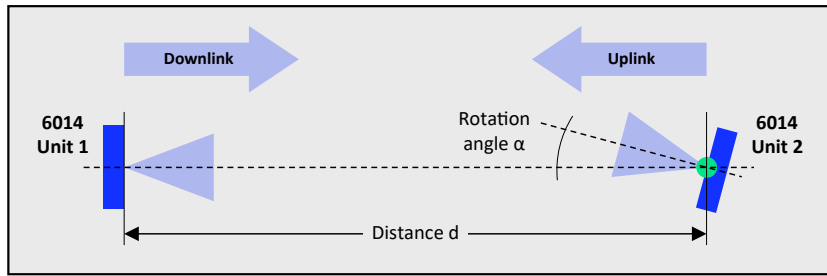


Figure 4: Trulifi 6014 device rotation

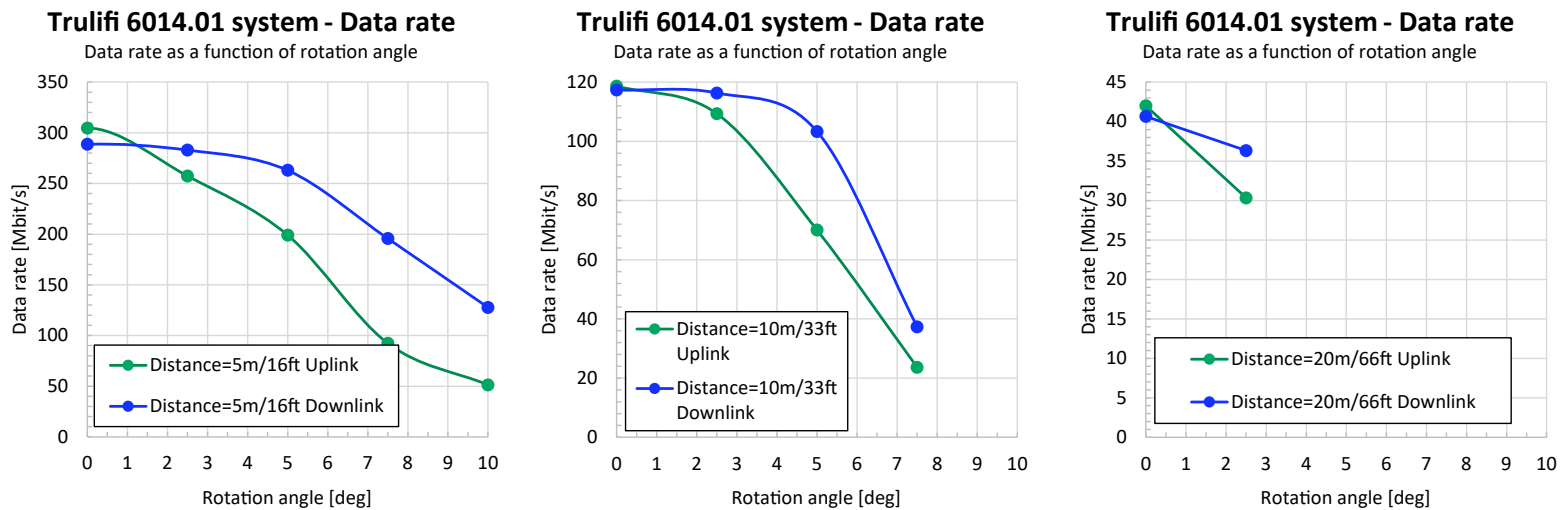


Figure 5: Data rate as a function of rotation