trulifi
by signify

Trulifi 6002

Point-to-Multi-Point System

Access Point 6002.1

Technical specification

Trulifi System 6002.1

Humidity	20 - 90% non-condensing
Storage temperature	-40 to +80 °C / -40 to +176°F
Standards	IEC 62368-1, IEC 62471, IEC 60825-1, IEC 60825-12
Certification	CE / NRTL US Canada / FCC

Trulifi Access Point 6002.1

Mains voltage	100-240 V, 50/60 Hz
System power	35 W (based on 6 transceivers connected)
Power factor	0.9
Average ambient temperature	+25 °C / +77°F
Operating temperature range	+10 to +40 °C / +50 to +104 °F
Network communication	Data link input connection RJ45 Cat. 5/5E/6 Ethernet cable (cable not included)
Multi-user capability	Up to 16 users per Access Point
Transmission mode	Half duplex
Encryption	End-to-End encryption based on AES-128
Standard	Designed for ITU-T G.9991
License options	License for NMC *

Trulifi Transceiver 6002.1

Voltage	24 V DC provided by the Trulifi Access Point 6002.1
System power	5 W at 230 V AC (supplied by Trulifi Access Point 6002.1)
Downlink wireless optical communication support	Infrared, wavelength 850 nm
Average ambient temperature	25 °C / 77°F
Operating temperature range	+10 to +40 °C / +50 to +104 °F
Network communication	Data link input connection RJ12 7m SFTP cable (cable included)

Trulifi USB Key 6002.1 & 6002.22

Voltage	5 V DC provided via USB 3.0
System power	3.5 W
Uplink wireless optical communication support	Infrared, wavelength 940 nm
Average ambient temperature	+25 °C / +77 °F
Operating temperature range	+10 to +35 °C / +50 to 95°F
Network communication	Data link input connection USB 3.0 Type-C (cable included)
Supported Operating Systems	Windows 7, Windows 8 Windows 10. MacOS 10.14 or higher, MacOS 11

Trulifi Controller 6800 Unit/Application (optional)

Multi-domain capability	Up to 16 Access Points can be controlled with 1 Trulifi 6800 Controller Unit or up to 64 Access Points with the Trulifi 6800 Controller Application
Availalble Variants	6800.00 - Controller Unit EU 6800.01 - Controller Unit US 6800.20 - Controller Application
Standard Features	- Control over connected Access Points and USB Keys - Manage access (passwords) of system - Centrally manage firmware update
Optional Features (Licensed)	Network Monitoring and Control (SNMPv1, SNMPv2c, SNMPv3)

* To support NMC on a Trulifi 6002.1 system a Trulifi Controller 6800 and licenses are required. (Sold separately)

System Date rate

Net data rate	150 Mbit/s download 140 Mbit/s upload *Measurement conditions:* • 1.2 m/3.9 ft distance between USB Key and transceiver • USB Key located straight under transceiver (radius 0) • 6 transceivers connected

System operating distance and coverage area

Operating distance between USB Key and transceiver	1.2 m/3.9 ft to 2.8 m/9.2 ft	
Connectivity coverage area per transceiver	*Distance between USB key and transceiver:*	*Ø Radius:*
	1.2 m/3.9 ft	0.65 m/2.1 ft
	1.8 m/5.9 ft	1.00 m/3.3 ft
	2.8 m/9.2 ft	1.50 m/4.9 ft

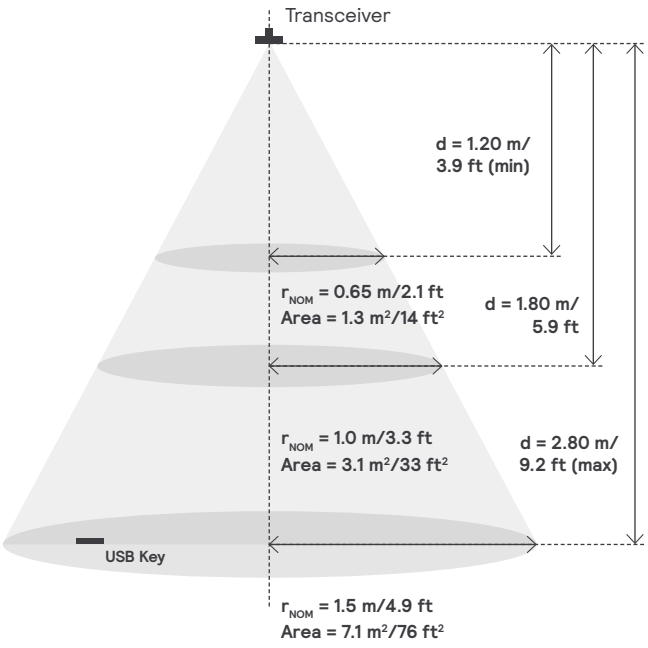

Figure 1: Coverage area

The LiFi coverage area of one transceiver is a circle of which the radius depends on the distance d between the transceiver and the USB key. Radial distance 0 represents the location directly under the transceiver. The recommended operational area spreads from 0 up to the nominal radial distance r_{NOM} as depicted in Figure 1.

The downlink and uplink data rates depend on the distance d between the transceiver and the USB key, as well as the radial distance, as depicted in Figure 2 and Figure 3.

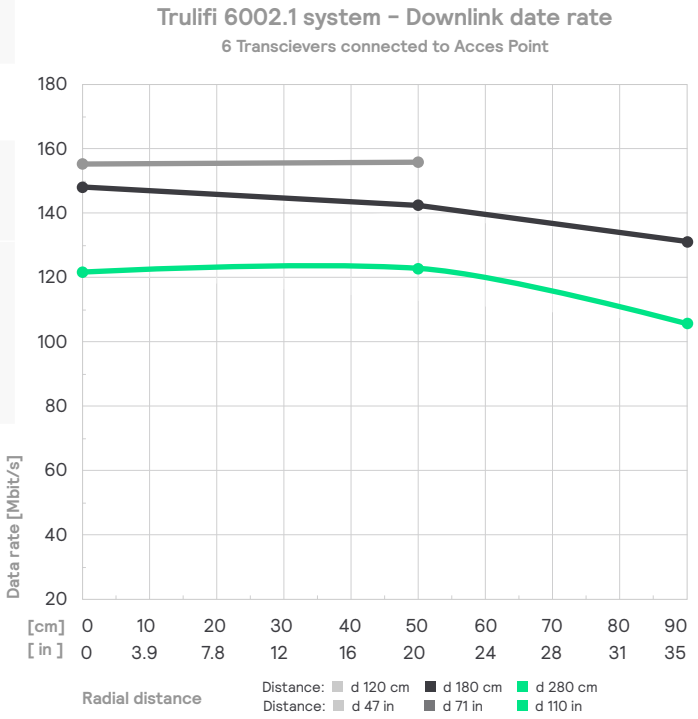

Figure 3: Downlink data rate

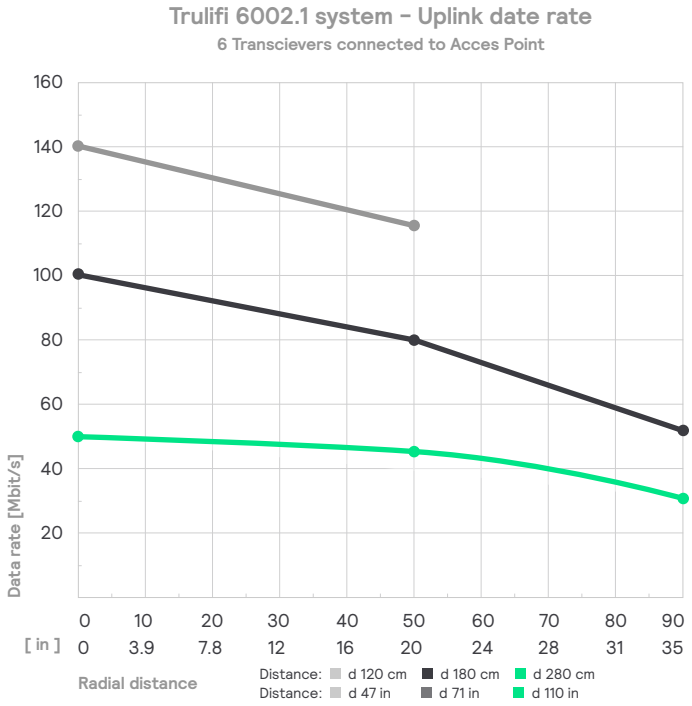

Figure 2: Uplink data rate

Overlapping coverage areas

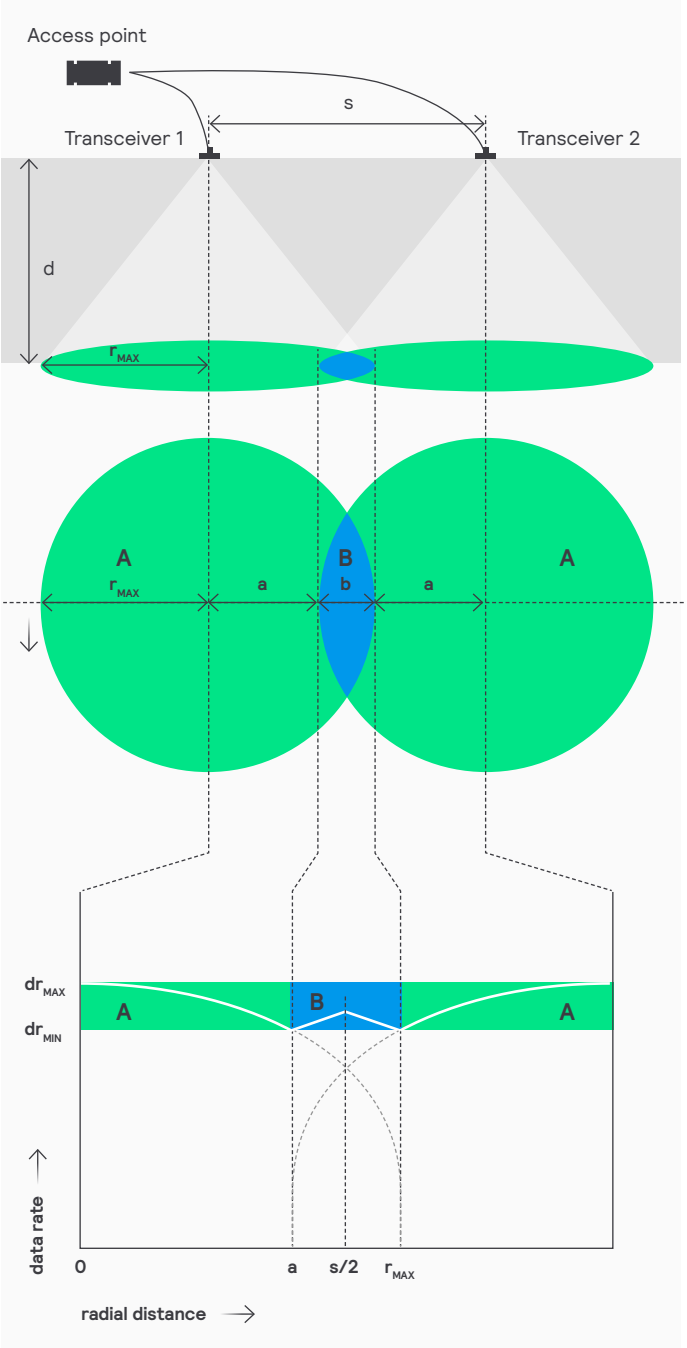

Figure 4: Overlapping coverage areas

Legend

s	transceiver spacing
d	distance transceiver-USB key
r_{MAX}	radius of max coverage area
a	radius of area without overlap
b	max width of overlap area
v = s / d	relative transceiver spacing
A	areas without overlap
B	overlap area
dr_{MAX}	Max data rate
dr_{MIN}	Min data rate