Digital DOC

Blū
Intraoral Sensor
Technical Info

DESCRIPTION AND INTENDED USE

Blu is a digital imaging solution for Intra oral dental radiography based on CMOS (Complementary Metal-oxide Semiconductor) technology. The sensor is a receptor which captures the images obtained when using an X-Ray generator for diagnostic purposes. State-of-the-art technology reduces the patients'exposure and provides excellent image quality with no missing data due to the single-chip CMOS.

The head has an ergonomic design based on human oral anatomy for patient convenience and comfort.

Blu employs a fibre optic plate with CSI scintillator for X-Ray-to-light converter. The FOP(Fiber Optic Plate) is a highly X-Ray attenuatin g material that minimizes X-Ray absorption on the end CMOS photosensor array, thus minimizing X-Ray induced noise at the photosensor array. In addition, the scintillators offer high-resolution performance compared to conventional phosphors.

Blu outputs X-Ray imaging data output of CM OS to 12-bit Digital Data through ADC.
In addition, it can detect the external X-Ray source and send a trigger signal to acquire the synchronized X-Ray Imaging Data.

Blu is available in two sizes:
   Blu size 1 20.00 x 30.01 mm active area
   Blu size 2 25.95 x 37.96 mm active area

   Code IS014-S Blu intraoral sensor size 1
   Code IS015-S Blu intraoral sensor size 2

   Key Features
   Rounded off edges
   Smooth casing
   Outstanding cable flexibility,
   Direct connection to personal computer for image acquisition via USB direct connector.
   Cesium Iodide (CsI) scintillator layer
   Available in two formats: size 1 and size 2

GENERAL CHARACTERISTICS

Unit name	Blu
Manufacturer	Trident Srl Via Artigiani 4, Castenedolo, 25014 (BS) Italy
Classification according to Directive EC 93/42	Class IIa with Type BF applied parts
Applicable Standards	EN 60601-1:2005 EN 60601-1-2:2007 IEC 60601-2-65:2012

Digital DOC

Blū

SPECIFICATIONS

Parameter	Unit	Size 1	Size 2
Sensor Type	-	CMOS Photodiode Array	
X-ray convertor	-	FOS(FOP + CsI)	
Dimensions W x L x H)	mm	25.4 x 36.8 x 4,8	31,3 x 42,9 x 4,8
Weight	gr	Less than 100	
Pixel Size	µm	18	
Active Area	mm	20,00 x 30,01	25,95 x 37,96
Effective Area*	mm	19,80 x 29,80	25,77 x 37,78
Number of Active Pixels	pixels	1110 x 1666	1442 x 1998
Number of Effective Pixels	pixels	1100 x 1656	1432 x 1988
Data output	-	USB 2.0	
USB cable length	m	Less than 2.7	
Electrical rating		DC 5V, 500 mA	
Operation mode		Global shutter	
Protection against water		IP68	

* X-Ray sensitive area

RECOMMENDED OPERATING CONDITIONS

Parameter	Unit	Specification
Operating temperature	°C	+10 to +30
Operating humidity	%	30 to 80
Storage temperature	°C	-20 to +60
Storage humidity	%	10 to 80

SENSOR PERFORMANCE SPECIFICATIONS

Parameter	Unit	Size 1	Size 2
SNR	dB	≥ 35	≥ 35
Sensitivity [1]	ADU/µGy [2]	5,0 to 8,0	5,0 to 8,0
Resolution [3]	3lp/mm	≥ 50	≥ 50
	6lp/mm	≥ 25	≥ 25
	8lp/mm	≥ 15	≥ 15
Noise [4]	ADU	≤ 2,0	≤ 2,0
A/D	Bits	12	12
Energy Range [5]	kVp	60 ~ 70	60 ~ 70

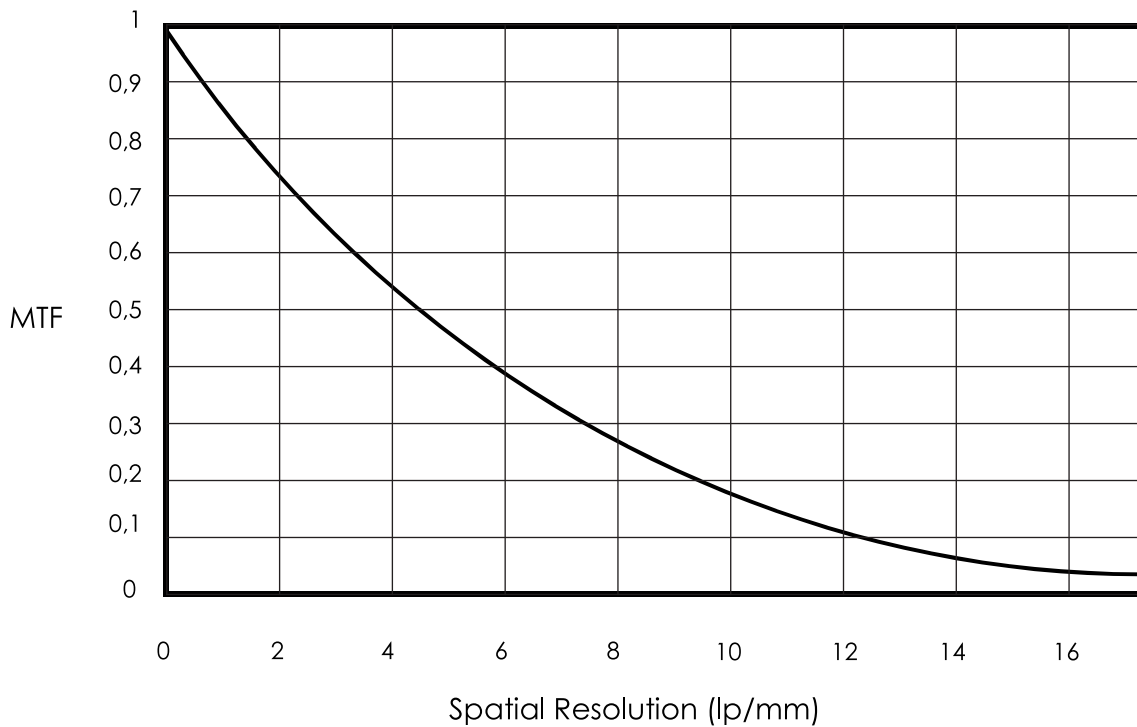[1] Measured @ 60 kVp, 4mm Al filter
[2] µGy is the unit of X-Ray exposure (1mR = 8.69 µGy)
[3] Theoretical Spatial Resolution
[4] RMS of dark current
[5] Recommended Range, more than 70 kVp affects the sensor's life time

Digital DOC

Blū

RESOLUTION

MTF vs Spatial Resolution (lp/mm)

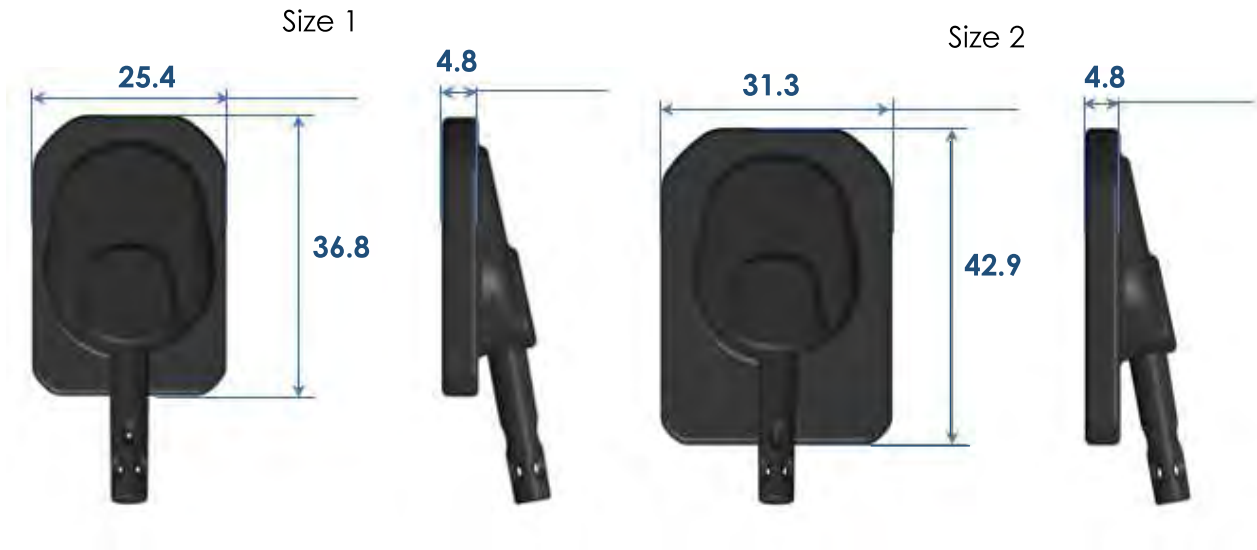# SYSTEM REQUIREMENTS

1. Operating System
   - Windows® 7 (32/64 bit) SP1, Windows® 8 64 bit, Windows ® 10
2. Hardware requirements:
   - Main CPU: Intel i5-2520M 2.5 GHz or superior
   - Main Memory: 4 GB
   - Video: 1024x768 resolution in 65,000 colours (idedly 1280x1024 - 16 million colours, 32 bit)
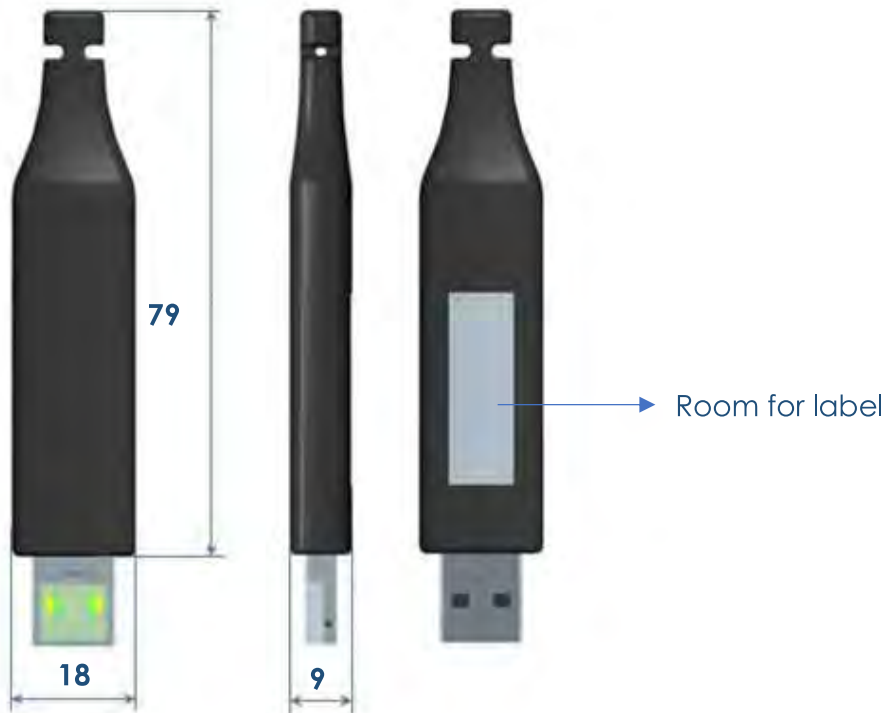   - HDD: 500 GB
   - USB Port 2.0

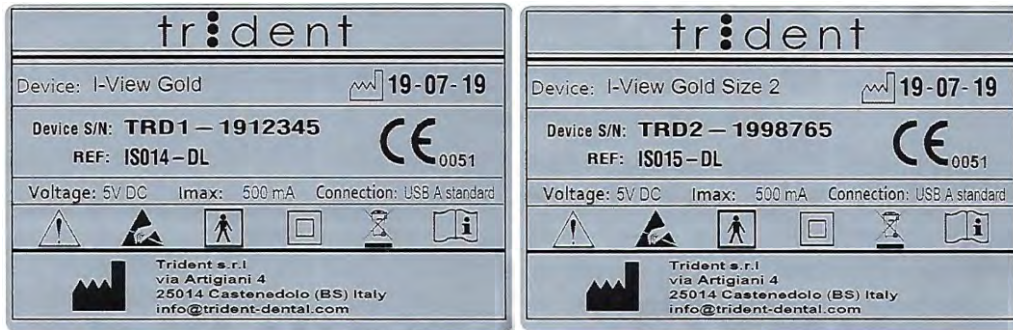# GEOMETRIC INFORMATION (in mm)

Sensor head

Size 1

25.4

4.8

36.8

Size 2

31.3

4.8

42.9

Interface board
Interface board is common component for both sizes

79

18

9

Room for label

LABEL

Device: I-View Gold	19-07-19
Device S/N: TRD1 — 1912345	CE 0051
REF: IS014–DL	
Voltage: 5V DC	**Imax:** 500 mA	**Connection:** USB A standard
Trident s.r.l via Artigiani 4 25014 Castenedolo (BS) Italy info@trident-dental.com	

Device: I-View Gold Size 2	19-07-19
Device S/N: TRD2 — 1998765	CE 0051
REF: IS015–DL	
Voltage: 5V DC	**Imax:** 500 mA	**Connection:** USB A standard
Trident s.r.l via Artigiani 4 25014 Castenedolo (BS) Italy info@trident-dental.com	

PACKAGING

Box	W (Kg)	Size (cm)
	0.4Kg	18 x 13 x h3.5

Digital DOC

Blū