

## Inspections

<b>Company name</b>	Intravis GmbH				
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<b>Preform inspection systems</b>	PreWatcher Offline	PreWatcher Inline	Sample-PreWatcher	ColorWatcher Integrated	LayerWatcher
<b>Inspection speed</b>	up to 100,000pph	up to 72,000pph	up to 1,200pph	8 preforms within 0.25 s	up to 144 pph
<b>Inspected parameters:</b>					
<b>Geometry / Body</b>	Contamination; short shots; length; diameter; shape; unmelted material; oil & water marks; burn spots; scratches; opacity; crystallisation; streaks; bubbles	Contamination; short shots; length; diameter; shape; unmelted material; oil & water marks; burn spots; scratches; opacity; crystallisation; streaks; bubbles	Contamination; short shots; length; diameter; shape; unmelted material; oil & water marks; burn spots; wall thickness; inner wall damage; core shift; scratches; opacity; crystallisation; streaks; stress test with polarised light; bubbles		Presence of barrier layers; thickness of barrier layers; position of barrier layers; structure of barrier layers; position of barrier leading edge; position of barrier trailing edge
<b>Thread area</b>	Contamination; thread dimensions; defects at the neck support ring; flash; pulled thread;	Contamination; thread dimensions; defects at the neck support ring; flash; pulled thread	Contamination; thread dimensions; defects at the neck support ring; flash; pulled thread		
<b>Mouth / Sealing surface</b>	Diameter; ovality; short shots; flash; scratches and notches on the sealing surface; defects at the neck support ring; contamination	Diameter; ovality; short shots; flash; scratches and notches on the sealing surface; contamination	Diameter; ovality; short shots; flash; scratches and notches on the sealing surface; inner mouth wall inspection; contamination		
<b>Gate / Dome</b>	Contamination; grooves; holes; cracks; crystallisation; positioning of injection point; unmelted material; gate length; gate deformation; stringing	Contamination; grooves; holes; cracks; crystallisation; positioning of injection point; unmelted material; gate length; gate deformation; stringing	Contamination; grooves; holes; cracks; crystallisation; positioning of injection point; unmelted material; gate length; gate deformation; stringing		
<b>Colour</b>	Colour and intensity deviations ( $\Delta L^*$ , $\Delta a^*$ , $\Delta b^*$ ); presence of UV blocker; presence of barrier; presence of IR absorber (reheater)	Colour and intensity deviations ( $\Delta L^*$ , $\Delta a^*$ , $\Delta b^*$ ); presence of UV blocker; presence of barrier; presence of IR absorber (reheater)	Colour and intensity deviations ( $\Delta L^*$ , $\Delta a^*$ , $\Delta b^*$ ); presence of UV blocker; presence of barrier; presence of IR absorber (reheater)	Colour and intensity deviations ( $\Delta L^*$ , $\Delta a^*$ , $\Delta b^*$ ); presence of UV blocker; presence of barrier; presence of IR absorber (reheater); detection of trend of colour deviations	
<b>Cavity number</b>	Cavity number reading; cavity related statistics; preform sorting according to cavity number; powerful cavity reading without need for learning for most fonts; possibility to share information based on cavity number with IMM;	Cavity number reading; cavity related statistics; preform sorting according to cavity number; powerful cavity reading without need for learning for most fonts; possibility to share information based on cavity number with IMM	Cavity number reading; cavity related statistics; preform sorting according to cavity number; enables collection of reference samples; powerful cavity reading without need for learning for most fonts; possibility to share information based on cavity number with IMM	Cavity related statistics; powerful cavity reading without need for learning for most fonts; possibility to share information based on cavity number with IMM	Cavity related statistics; powerful cavity reading without need for learning for most fonts; possibility to share information based on cavity number with IMM
<b>Measurement of absence or presence of barrier material</b>	Yes	Yes	Yes	Yes	Yes
<b>Layer thickness &amp; position measurement at distinctive points</b>	No	No	No	No	Yes
<b>Layer thickness &amp; position measurement at the complete body by scanning</b>	No	No	No	No	Yes
<b>Features:</b>					
<b>Installation: Stand-alone</b>	Yes	Yes	Yes	No	Yes
<b>Installation: Inline</b>	Yes, but optimised for offline	Yes, optimised for inline after IMM and before blower and filler	Yes, sampling	Yes, integrated into injection moulding machine	Yes, sampling
<b>Side camera for cavity recognition</b>	Yes, 4 cameras	Yes, 3 cameras	Yes	No	Yes
<b>Method: destructive/non destructive</b>	Non destructive	Non destructive	Non destructive	Non destructive	Non destructive
<b>Data base connection</b>	Yes, all industry standards supported; ready for Industry 4.0 applications: XLS formats; SQL and several others; connectable to IntraVisualizer, ERP & QMS	Yes, all industry standards supported; ready for Industry 4.0 applications: XLS formats; SQL and several others; connectable to IntraVisualizer, ERP & QMS	Yes, all industry standards supported; ready for Industry 4.0 applications: XLS formats; SQL and several others; connectable to IntraVisualizer, ERP & QMS	- yes, all industry standards supported; - Ready for Industry 4.0 applications: XLS formats; SQL and several others; connectable to IntraVisualizer, ERP & QMS;	- yes, all industry standards supported; - Ready for Industry 4.0 applications: XLS formats; SQL and several others; connectable to IntraVisualizer, ERP & QMS;