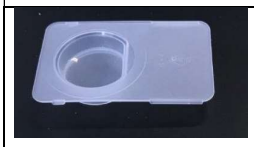
SOLENT UNIVERSITY	**Project Title:** Coopervision Neo Primary Packaging Development Rig	**Student:** Pawel Kolakowski **Student No.** Q13265300 **Course Title:** Engineering Design and Manufacture	 CooperVision

The aim of this project was to perform full DoE based on 4 variables: temperature, time, pressure and saline dose to investigate the performance of the new Harro Hoefliger (HH) Primary Packaging Development Rig to determine the limitations of the equipment and to confirm the operational parameters for packaging process, allowing to introduce new blister design.

Old Design	New Design
	

DoE was identified as most appropriate approach to complete this. For this purpose, additional training was organized.

During trials performed, equipment operational limits for temperature, time, pressure and dosage were identified and used to create DoE

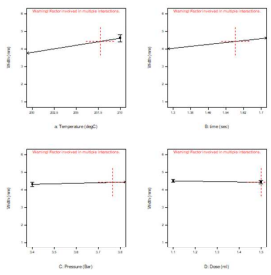
Temperature		Pressure		Time		Dosage	
°C		Bar		Sec		mL	
min	max	min	max	min	max	min	max
190	210	3.4	4.2	1	2	1.1	1.5

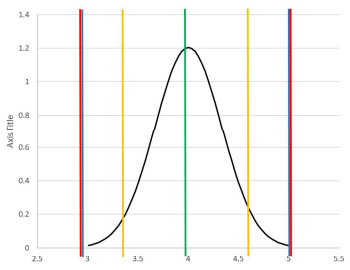
Seal width was set as a response for DoE and must be approximately 4mm (±1mm)

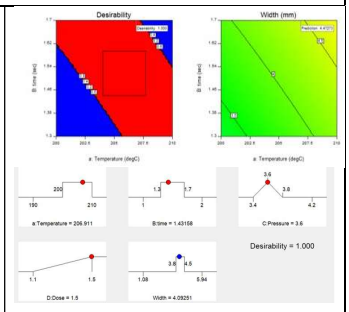
Bioburden level is playing crucial role in lens sterility. Samples checked identified additional problem with high level of bioburden in dosing valve. New method was developed to fully sanitise machine Contamination level was reduced from 19,000 to 15cfu

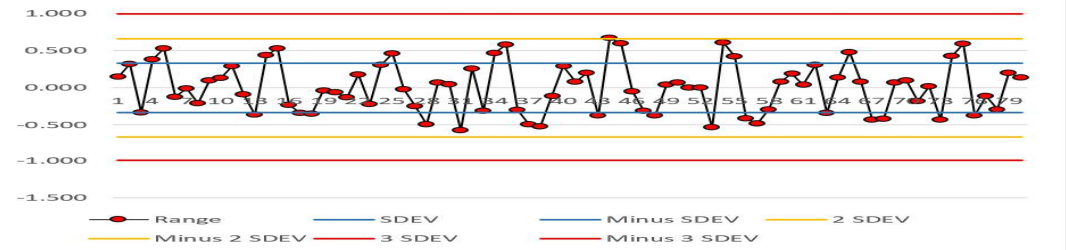
Disinfectant agent

During process optimisation operational parameters and tolerances were identified.









Minus SDEV	SDEV	Minus 2 SDEV	2 SDEV	Minus 3 SDEV	3 SDEV
-0.331	0.331	-0.663	0.663	-0.994	0.994

minus 2 σ	plus 2 σ	minus 3 σ	plus 3 σ	Nominal	UCL	LCL	CP
3.34	4.665	3.008	4.996	4	5.000	3.000	1.00601428

Coopervision is making around 70 million of Neo product per year. Due to company environmental responsibilities and values, new packaging is more environmentally friendly and help save over 700 tonnes of plastic and 100 tonnes of foil per year for Neo product.