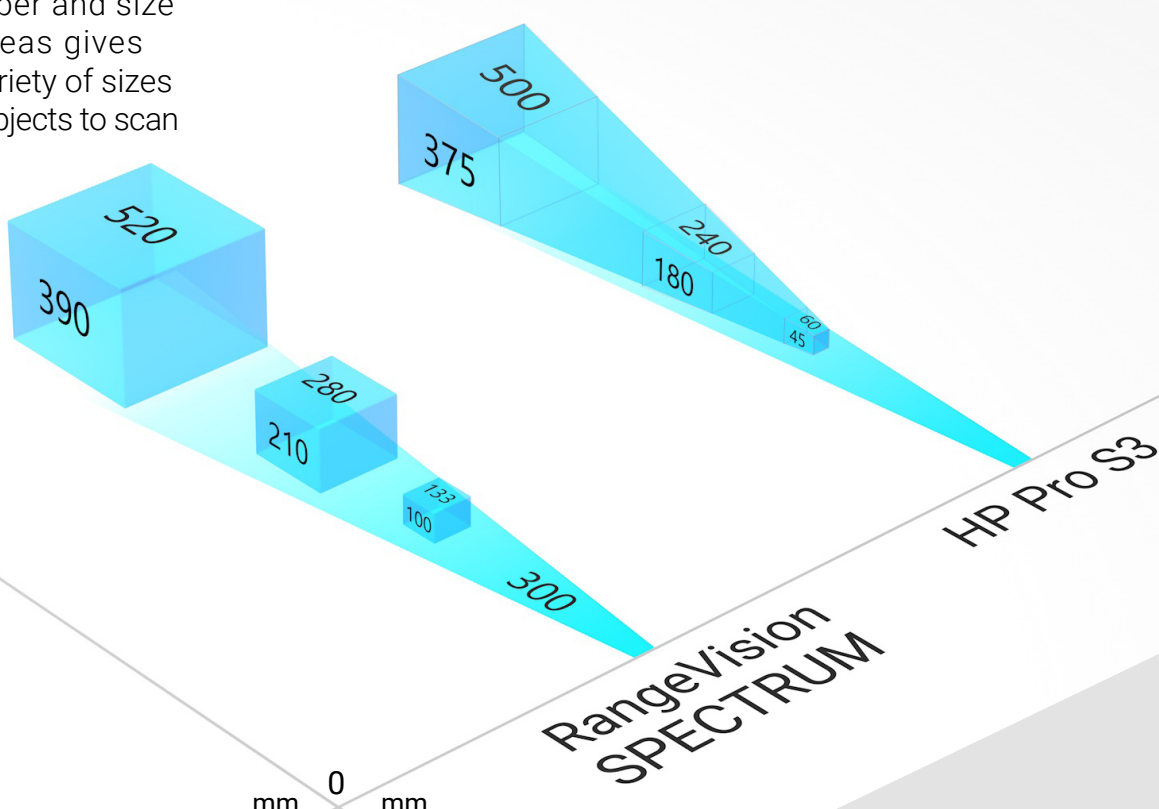


Scanning areas

Variety of number and size of scanning areas gives advantage in variety of sizes and shapes of objects to scan



Comparison of optical 3D scanners

Technical specifications

HP		RangeVision	
HP Pro S3		Spectrum	
Technical specs			
structured light	Type	structured light	
LED projector	Light source	LED projector	
Up to .05% of scan size	✗ 3D Accuracy Both scanners have close values of 3D accuracy.	✓ 0.04 mm - 0.12 mm	
Up to .05% of scan size	✗ 3D resolution, mm. HP operates with only one parameter «Resolution/Precision» to indicate its accuracy and resolution. Mathematically, with given light source/optics and minimum error .05% of scan size, it means that the best resolution for the smallest scanning area can't be higher than 0.07 mm. Spectrum technical specs are clear, that is convenient for a engineering tasks.	✓ 0.072 mm - 0.260 mm	
Up to 2,300,000 vertices per scan	✗ Mesh density With Spectrum, a user can get 30% more density of mesh per scan.	✓ Up to 3,000,000 vertices per scan	
1 + 1 (optional)	✗ Number of cameras HP: the user can buy the second camera as an option. But the principle of action remains the same, single-camera. Spectrum is a two-cameras system, that makes a scanning process more accurate and stable, reducing the need to recalibrate the scanner during operations to a minimum.	✓ 2	
no information available	Cameras	3,1 Mpix	
Scanning of different-sized objects			
-	✗ Number of scanning areas	✓ 3	
From 60x45 to 500x375	✗ Size of a scanning area With HP Pro S3 scanner the user has to define the scan area himself by changing the position of projector and angle of camera(s). It makes the setup of the scanner tricky and can result in scan errors. Spectrum has three tested and preset scanning areas. The setup process is simplified by the Setup Wizard, presented in the software.	✓ From 133x100 to 520x390	
yes	Texture	yes	

HP HP Pro S3			RangeVision Spectrum		
Software					
free, unlimited		License Both scanners have unlimited USB license dongle included in the price of the scanner.		free, unlimited	
Purchasing of Upgrade Code is necessary to update from an existing license version to the next one	✗	Updates	✓	free	
Usability					
One-snap calibration. It is recommended to repeat calibration as many times as possible during the scanning. Especially if the object is bigger than a field of view.	✗	Calibration One-snap calibration is the main disadvantage of HP - it is enough for hobbysts to start with 3D scanning, but professional calibration is done with 10-12 shots. One-snap calibration method is responsible for the scan errors and further alignment problems.	✓	11-snaps calibration.	
Scans can only be aligned pairwise and globally. Often it is hard to get adequate alignment result (especially if the object has a complex shape or symmetrical surfaces).	✗	Scans alignment	✓	There are a lot of scan/scan group alignment options. Automatic alignment combines scans or groups of scans in any position relative to each other	
In some cases the final 3D model is not as detailed as the source scans. For example, surfaces may become smoothed or the number of triangles may decrease	✗	Building a 3D-model	✓	Sufficiently high level: scan's level of detail is translated onto the final model	
OBJ, STL, PLY	✗	Export file format Both scanners support the most popular export formats.	✓	stl, obj, ply, wrl, ascii, ptx	
free scanning / scanning on a turntable	✗	Scanning modes	✓	free scanning / scanning on a turntable / with markets	
no	✗	Scanning with markers Spectrum can scan and align scans by markers. It simplifies and ensures high accuracy when scanning large and smooth objects (eg cylindrical shape or with plenty of flat surfaces). All professional scanners use markers.	✓	yes	
Hardware					
1	✗	Calibration plates	✓	3	
carton box	✗	Packaging	✓	travel case	
3136	✓	Price, €	✗	5490	
turntable 964 € , HP 3D Dual Camera Upgrade Kit - PRO S3 1 165€, HP 3D Desk Scan Lever Pro 400€		Accessories Spectrum comes with all accessories to scan right out of the box while HP requires buying more options. A travel case enables 3D scanning to be easily performed directly on site.		table mount 345 €	
5665	✓	Total price with accessories, €	✗	5835	

Basic 3D scanning kit

