

PointFuse 2023.3 FAQ's

Products

What is the difference between PointFuse and PointFuse powered by JetStream?

PointFuse powered by JetStream is the only way to ingest the LGS file format into PointFuse software. See our <u>comparison table</u> for more details.

What is the difference between PointFuse ReVue, Standard and Pro?

PointFuse ReVue is the basic package that contains meshing capabilities and basic clean up tools only. PointFuse Standard contains all of the features of PointFuse ReVue , plus additional tools to exploit PointFuse's unique automatic segmented meshes enabling easy object classification. PointFuse Pro incorporates all of the features of PointFuse ReVue and standard with the addition of the Space module, that generates floorplans, building reports and LOD 200 BIM models. See our <u>comparison table</u> for more details.

What is the difference between PointFuse Standard and Team?

PointFuse Team does not allow you to convert point clouds into mesh model. However you can still classify and export previously created mesh models, allowing more members of your team to work with the manual classification tools. See our <u>comparison</u> <u>table</u> for more details.

Trial

Can I try PointFuse for free?

Yep! We offer a free trial (no credit card needed). Click the link in the top right hand corner of the website.



What are the differences between the full and trial versions of PointFuse?

They have exactly the same functionality within the software, however it is not possible to export to third party formats. The trial does include the Space Management module included in PointFuse Pro which will enalbe you to create parameterized models quickly and easily. You can also produce building Reports and floorplans.

What happens when my PointFuse license expires?

The Welcome screen shows when your licence will expire. When the trial expires, PointFuse will not run until a valid license has been purchased.

Where can I download PointFuse software?

To download PointFuse software, you first need to set up an account with us using the "Free Trial" link in the top right hand corner of this page. If you already have an account, then you can use this link to download the software. It is also possible to download the trial via the <u>Autodesk App Store</u>.

Purchasing

How do I buy a full license?

The faster way to buy is to go to the <u>Pricing Page</u> and select Buy. Alternatively, raise a ticket in our <u>Support Page</u> to get in touch with a sales representative or contact one of our <u>resellers.</u>

Can I buy a PointFuse Team license on its own?

You can only purchase a PointFuse Standard or Pro Team license if you have a current PointFuse Pro or standard license.



Where can I access and buy PointFuse powered by JetStream?

PointFuse powered by JetStream is available to trial and purchase through your local <u>Leica Geosystems</u> sales representative or distributor.

Terminology

What is a segmented mesh model?

A segmented mesh model is a mesh created using PointFuse that has been split up into discrete separable surfaces. This unique approach to meshes is achieved by automatically detecting changes in the geometry of the point cloud. It is this segmentation that allows you to select and classify all of the objects contained within the mesh.

What is a classified mesh model?

A classified mesh model is a term unique to PointFuse that describes a segmented mesh model that has had an IFC structure applied to it. This provides the backbone for the automatic and manual classification of the mesh model in PointFuse.

What is IFC?

Industry Foundation Classe (IFC) is a global standard used to describe, share and exchange construction information and ensures interoperability of data between software packages. Find out more on the <u>buildingSMART website</u>.

What is the Space Tool?

Space is the name of the BIM toolset within PointFuse and PointFuse powered by JetStream. The tool converts classified mesh geometry into LOD200 BIM models. It requires a license of "Pro" to access the tool.



What is BIM?

Building Information Modeling (BIM) is an intelligent 3D modelbased process used in construction. The term is often colloquially used to refer to a parameterized 3D design model, however this is only one part of the process. Much of the BIM process is about adding metadata, parameters, and intelligence to the 3D object to aid with the construction process.

What is an LOD 200 BIM model?

Level of Detail (LOD) is used to define the level of information contained with a BIM model. Generally, it refers to the geometric representation of a site or object and any additional information attached to it.

LOD 200 means that any model geometry is represented as a generic system or object, whose size shape and location are approximate. For PointFuse, this means that all levels are assumed to be flat, all walls are plumb and that all angles are 90degrees.

Features and Functionality

What point cloud import file formats are supported?

Using PointFuse you can import point cloud data from CL3, CLR, DP, E57, FLS, FWS, LAS, LAZ, PTS, PTX, RCP, RCS, VPC, XYZ and ZFS files.

Using PointFuse powered by JetStream, you can also view and mesh directly from an LGS file.



Format	Texturing	Classification	Classification	Handles large meshes	Typical 3rd party
IFC	Ν	Y (IFC Mapped)	Y	Y	BIM packages e.g.
FBX	Y	Y	Y	Y	Autodesk Navisworks,
OBJ	Y	Y	Y	Y	Visualisation packages e.g.
DWG	Y	Ν	Υ	Ν	Autodesk AutoCAD and
X3D	Y	Ν	-	Ν	X3D Web viewers
SKP	Y	Y	Y	Ν	Sketch-up
STL	Ν	Ν	-	Ν	Solidworks and other CAD
NWC	Ν	Y	Ν	Y	Autodesk Revit
DAE	Y	Ν	-	Ν	Visualisation packages e.g.
USD	Y	Y	Y	Y	Nvidia Omniverse
PXF (Revit Plug-in)	Ν	Y	Y	Y	Autodesk Revit

What mesh model export formats are supported?

What export formats are available with each product? (ReVue, Standard and Pro)

	ReVue	Standard	Pro
FBX (classifications and textures)	•	•	•
OBJ (classifications and textures)	•	•	•
DAE (textures)	•	•	•
GLTF (classifications and textures)	•	•	•
GLB (textures)	•	•	•
USD (classifications and textures)	•	•	•
X3D (classifications and textures)		•	•
DWG (classifications and textures)		•	•
STEP (classifications and textures)		•	•
SKP (classifications and textures)		•	•
STL (classifications)		•	•
NWC (classifications)		•	•
IFC (classifications)		•	•
Revit Plugin (Classifications)		•	•

What formats can I export my Space Management model in?

Your Space Management model can be exported in a number of ways. As a Building report in PDF, HTML or CSV. As a floorplan you can create a DXF file. As a 3D, you can create an IFC file.

How do I easily re-orient my screen to centre on an object?

Easy: just double left click!



How do I easily navigate the model?

Use the double left click to centre the view on an object, then use the middle mouse button to zoom and pan. Click and hold the left mouse button to rotate around the centre of the view.

The navigation and zoom functions seem to be working slowly, making it difficult to navigate?

Navigation in PointFuse is driven from a central orbit which is the point of focus. When zoomed in to nearly the maximum extents, the navigation functions will become slow. You need to scroll the mouse wheel out until the navigation becomes manageable again, then use double left click to navigate to the objects more easily you need.

Can I display mesh models with textures?

Yes, if the source point cloud contains RGB data or intensity data then these are created into two separate textures. Use the advanced mesh creation options to adjust the quality of the created textures. You can use the icon in the ribbon to toggle between the textures in the 3D view.

Is there a measurement tool?

Yes, the measurement tool is available when viewing a point cloud, mesh or BIM mesh.

Can you create plans and sections from the mesh?

Yes, with the mesh model or BIM mesh model open you can use the 2D slice tool to generate a DXF or DWG vector file. This slice will retain any classification and colors present in the mesh model.

Can I create scaled ortho images?

Yes, the ortho image tool works on both the mesh model and the point cloud.



What mesh surfaces are automatically classified?

Large Horizontal, Vertical and Angled planes are automatically classified when a BIM Mesh model is created. This will appear as 3 automatically created layers within the project structure, either at the "Site" level of the IFC hierarchy for a multi-story model, or at the "Building Story" level for a single-story model.

How do I manually classify mesh surfaces?

All surfaces can be manually classified using the selection and classification tools available when viewing a BIM mesh model. Hold CTRL and click on surfaces to select them. Use the "Classify" or "Merge" buttons to classify your selection into the chosen layer. More detailed instructions can be found in the pink highlighted tab at the bottom of the 3D view.

What mesh surfaces do I need to classify?

Understanding the objects that you need for your delivery is an important time saving step as this will define exactly what objects you classify and what objects you don't. For a BIM mesh model deliverable, ensure that you have set up a classification template that only contains layers for the objects essential for the final model.

If using the Space tool, then you only need to classify the Walls into each building story. Classifying the windows and doors and the ceilings and floors is optional but does make the process easier so it is recommended. No other objects need to be classified.

Can you create plans and sections from the BIM model?

Yes, with the BIM model open in the 3D view, using the "Create Floor Plan" tool. This will generate a DWF or DWG file containing



the 2D information, including the geometry, door openings and room areas.

Is there a tool to section the point cloud?

Yes, you can crop your point cloud in PointFuse so that it contains only the points you want included in a mesh model. You can crop multiple times and choose whether to keep or discard each area selected. This is a recommended step for first time users looking to test out some of the setting profiles.

Can I create a mesh using multiple point clouds?

Yes, PointFuse can convert multiple point clouds into a single mesh model, using the same settings for all the point clouds, as long as they are all in the same folder.

How accurate is the mesh?

PointFuse statistically best fits the surfaces it creates through the points, meaning the mesh model is an accurate representation of the point cloud. The standard deviation of the points to a selected surface can be viewed in the properties to check the accuracy.

Does the mesh contain the point cloud coordinates?

Yes, the mesh model, BIM mesh model and BIM model are exported to the same coordinates as they were imported. You can choose to reset the origin to 0 on export, should your end use application not be able to handle models in global coordinate systems.

Where can I check what changes were made at each release of PointFuse?

They are listed near the back of the PointFuse User Guide.



Requirements and compatibility

What are the recommended system requirements for PointFuse?

CPU: Intel i9 10980xe or AMD Ryzen Threadripper 3950X. RAM: 32GB+ DDR3/4. Dedicated graphics card: one that supports OpenGL 3.3, such as the NVIDIA Geforce RTX 2080ti Operating system: Windows 7 or later, 64 bit. Hard drive: 1TB+ (NVMe Recommended).

What are the minimum system requirements?

CPU: 4 cores. RAM: 16GB. Dedicated graphics card: one that supports OpenGL 3.3

What are the key hardware considerations?

For reliable processing ability, then a CPU Thread to RAM ratio of at least 1:4 is recommended.

PointFuse will also use some temporary drive space in order to process, so at least 5x the size of the original point cloud in free disk space is required. No GPU processing occurs so this is less important to consider.

Can PointFuse run on a virtual machine?

Yes, you can, but only with a full license of the software. You cannot run the trial version on a virtual machine, or on a Mac. The trial is also incompatible with Windows Sandbox mode or Microsoft Hyper-V.

Does PointFuse work with a 3D mouse?

Not currently.



Troubleshooting

At startup, PointFuse displays 'An unacceptable value is specified for an enumerated argument' (error code 2008).

This means that the software is unable to access the graphics hardware. Ensure that the graphics card meets the minimum specifications. It must support OpenGL 3.3 and that the graphics card drivers are up to date.

The icons in my user interface are very large, making it difficult to use.

This is a common issue caused by the windows display settings. To solve, go to "Options, preferences" and untick the "Windows" settings. Note that you will need to restart PointFuse for this change to take place. If this does not solve your issue, head to your windows display settings and adjust the scaling settings to 100%.

The dialog boxes are larger than the screen, so I cannot press finish to run my processes.

This is a common issue caused by the windows display settings. To solve, go to "Options, preferences" and untick the "Windows" settings. Note that you will need to restart PointFuse for this change to take place. If this does not solve your issue, head to your windows display settings and adjust the scaling settings to 100%.

Why does my point cloud have a red exclamation mark in the project explorer?

This means that the point cloud import has either failed or has not finished. Check if there is a status bar running along the bottom of the screen. If there is not, then you will need to reimport the point cloud. Note that this may take a few minutes.

Should I decimate the point cloud prior to exporting?

No! PointFuse will work best with more points. Decimating the data removes valuable data points and so negatively impacts the



mesh and the texturing. We would always recommend using all of the points to create the mesh.

The software has closed unexpectedly during the mesh creation process.

This is caused by the computer running out of disk space or RAM. Ensure that you have around 5x the size of the point cloud available in free disk space on the drive where your caching location is pointed to. You can change this location on "Options, preferences".

If you have enough disk space, then it is likely to be a RAM issue. In preferences, consider turning down the number of threads or the RAM allocation to ensure the process can complete.

During Generate Surfaces, PointFuse displays 'No surfaces are found' (error code 3000).

This may be because the 'Resolution' has been set to too small a value. There are 3 main causes for this error message being displayed:

File issues: PointFuse cannot access the point cloud that it is trying to process. Ensure you have the correct admin permissions for the folder you are using, and check that there are no diacritics located anywhere in the directory. In Windows Explorer, check in the project's Point Cloud Data folder. There should be at least one .VPC file. If this is not present, then something has interrupted/corrupted the import, and so you will need to import the point cloud again. To solve, create a new project in a suitable folder and repeat the import.

The import can take some time for larger files, so you should take care not to accidentally cancel the import.



RAM issues: The size (extents or data size) of the point cloud are too large for the computer to handle and/or the resolution has been set to too small a value for the computer to handle. PointFuse requires RAM. The amount required will increase proportional to the level of detail and size (extents) of the point cloud. If the required RAM exceeds the available RAM on the computer at any stage of the process, it will fail. Ensure that PointFuse is the only program running on the computer during processing. In preferences, consider turning down the number of threads or the RAM allocation to ensure the process can complete or alternatively use the Crop tool to split the point cloud into smaller sections, and then process these separately.

Resolution issues: The resolution has been set to a value that is smaller than the minimum distance between points. To resolve, ensure that the chosen "Resolution" value is set to a number that is higher than the point density of the point cloud. You made need to use the advanced settings to achieve the desired results.

Why doesn't mesh have textures?

If you have used the pre-set settings profiles, then your mesh will have textures if the RGB values were present in the point cloud. You will simply need to switch the rendering mode from "Solid Color" to "RGB".

Can I view multiple mesh files in one view?

You can right click on any item within the project explorer to access additional viewing functionality. Choose to "Open in Current View" to bring multiple models alongside each other.

How do I square off the angles of a BIM model?

Once you have completed editing the positions of the walls manually and you are ready to export, select all of the walls in the



2D view by clicking and dragging the mouse. Then, use the "Make Square" tool. This tool works best when run at a global level to ensure all of the angles are squared off to 90 degree.

How do I export multiple mesh models at once?

To export multiple models into a single file, you first need to open them all up into a single 3D view. Then, use the "Export" option, define your settings and press finish. This will export all of the items in view into a single file, with multiple textures.

My mesh looks blocky once it has exported.

This will be due to a precision issue in your end use application, often caused by the model being in global coordinates. You will need to reexport the data from PointFuse, but check the "Reset to Origin" option to perform a global shift in the data.

My mesh has exported without textures.

Ensure that you have selected "RGB" from the drop down when you defined your export settings. This option is only available once a file type has been defined and is not available for all file formats.

My exported file won't open in my downstream software.

This is most often caused by the exported mesh model being too big to open. First, ensure that you exported the model with the "Merge Surfaces" option checked, especially if no classification has been performed. If this still doesn't solve the issue, then consider using the "Batch Export" option. This will export the mesh as individual tiles, which will be smaller and so therefore more likely to open in your end use package.

Why is my mesh bigger than the point cloud?

This can either be because the mesh settings chosen with a higher level of detail than the point cloud support, or some



optimization steps need to be performed. First, consider running the data at a lower level of detail, to achieve a lightweight model. If you have decimated the point cloud, then we recommend importing the original data, so the software has more points to work with. Next, ensure that you exported the model with the "Merge Surfaces" option checked, especially if no classification has been performed.

Licensing

How does PointFuse licensing work?

Our licenses are account based and "In The Cloud". Your username and password allows you to access PointFuse from any computer within the limitations of your account, although trial users are restricted to just one machine.

Why does it say that I am out of exports?

Trial users are not initially able to export to third party formats. Upon request up to three exports may be granted. This limitation is lifted with our full version.

I signed up for a trial ages ago but haven't had time to use it, has my chance to try PointFuse expired?

Not at all! The 15 day trial only begins the first time you use PointFuse.

Why am I told I cannot run my PointFuse on a virtual machine?

If your computer has Hyper-V installed or runs in Windows sandbox mode it is effectively running as a virtual machine. Contact PointFuse support and we will arrange a virtual machine trial for you.



How can I convert my PointFuse trial to a full license or extend my current license?

Easily! Our website allows you to purchase licenses or just contact PointFuse support.

Oh no, I've forgotten my password!

Don't worry, you can reset it using our End User Portal!

Why am I being asked to use a long code to get an activation certificate?

It sounds like you are being asked to activate offline. This is normal for those of you on secure networks who cannot access the internet. If this isn't you then please check your internet connection and make sure that *.nalpeiron.com is whitelisted by your security and firewall settings.

For IPV4 try whitelisting 184.106.60.185 and 20.237.110.18

For IPV6 try whitelisting 2001:4801:1041:202:6771:d485:abe9:a404 and 2603:1030:20c:9::2c2