The Straight-Blade Fan-Loaded Camera Box model is provided in two file formats compatible with many popular commercial CAD software.

Additionally, 13 triangular surface meshes (coarsest to finest mesh: $\sim 6 \times 10^3$ to $\sim 2.4 \times 10^7$ elements), are provided in two file formats.

All model and mesh file are that of the full-scale model (L=12.8 m, the largest size in the problem set).

Model File: IGES Format

IGES or IGS file is a standard text-based graphics file based on the Initial Graphics Exchange Specification (IGES). The Straight-Blade Fan-Loaded Camera Box model in IGS format is contained in the file "Straight-Blade_Fan-Loaded_Camerabox_s6.igs". The geometry coordinates in the IGES model are specified in units of meters.

Model File: STL Format

STL is a commonly used file format for additive manufacturing. The Straight-Blade Fan-Loaded Camera Box model in STL format is contained in the file "Straight-Blade_Fan-Loaded_Camerabox_s6.stl". The geometry coordinates in the STL model are specified in units of meters.

Mesh Files: File Names

	Mesh YY	Mesh YZ	Mesh ZZ	Mesh ZA	Mesh AA	Mesh AB	Mesh BB
Average Edge Length (m)	8.110×10^{-1}	5.689×10^{-1}	4.018×10^{-1}	2.858×10^{-1}	2.023×10^{-1}	1.431×10^{-1}	1.014×10^{-1}
Maximum Edge Length (m)	1.173×10^{0}	8.417×10^{-1}	5.788×10^{-1}	4.271×10^{-1}	3.025×10^{-1}	2.139×10^{-1}	1.474×10^{-1}
Minimum Edge Length (m)	4.88×10^{-2}	4.88×10^{-2}	4.88×10^{-2}	4.88×10^{-2}	4.88×10^{-2}	4.88×10^{-2}	4.88×10^{-2}
Number of Triangles	6 084	12 304	24 602	48 462	96 244	192 968	384 328
	Mesh BC	Mesh CC	Mesh CD	Mesh DD	Mesh DE	Mesh EE	
Average Edge Length (m)	7.16×10^{-2}	4.98×10^{-2}	3.55×10^{-2}	2.55×10^{-2}	1.82×10^{-2}	1.27×10^{-2}	
Maximum Edge Length (m)	1.077×10^{-1}	7.70×10^{-2}	5.39×10^{-2}	3.97×10^{-2}	2.83×10^{-2}	2.01×10^{-2}	
Minimum Edge Length (m)	4.88×10^{-2}	2.86×10^{-2}	2.01×10^{-2}	1.43×10^{-2}	1.02×10^{-2}	6.38×10^{-3}	
Number of Triangles	770 348	1 588 708	3 139 192	6 065 984	11 945 578	24 282 792	

Mesh Files: INP Format

13 triangular surface meshes are provided in INP format. The first line contains the number of nodes, *Nnodes*, and triangles, *Ntris*, in the mesh. The next *Nnodes* lines contain the x,y,z coordinates of each node in the mesh. The final *Ntris* lines of the file contain the connections for each triangular element in the mesh. The node coordinates in the INP files are specified in units of meters.

Mesh Files: UNV Format

13 triangular surface meshes are provided in Universal File (UNV) format. The node coordinates in the UNV files are specified in units of meters.

Uncompressing Mesh Files

Due to Github's intrinsic file size limit (100 MB), all mesh files were zipped. They can be uncompressed using standard zip programs.

The finest INP format mesh files "Straight-Blade_Fan-Loaded_Camerabox_model_meshDD", "Straight-Blade_Fan-Loaded_Camerabox_model_meshDE", and "Straight-Blade_Fan-Loaded_Camerabox_model_meshEE" were split into 2, 4, and 8 files, respectively, and then separately zipped.

The finest UNV format mesh files "Straight-Blade_Fan-Loaded_Camerabox_model_meshCD", "Straight-Blade_Fan-Loaded_Camerabox_model_meshDD", "Straight-Blade_Fan-Loaded_Camerabox_model_meshDE", and "Straight-Blade_Fan-Loaded_Camerabox_model_meshEE" were split into 2, 4, 8, and 15 files, respectively, and then separately zipped.

After uncompressing, the files should be concatenated into a single file; e.g., the following linux command will concatenate the files:

cat Straight-Blade_Fan-Loaded_Camerabox_model_meshDD.inp* > Straight-Blade_Fan-Loaded_Camerabox_model_meshDD.inp

cat Straight-Blade_Fan-Loaded_Camerabox_model_meshDD.unv* > Straight-Blade_Fan-Loaded_Camerabox_model_meshDD.unv