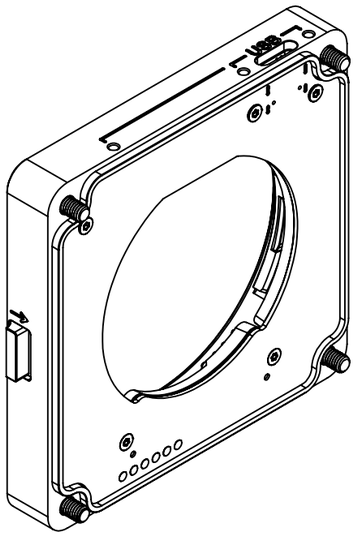

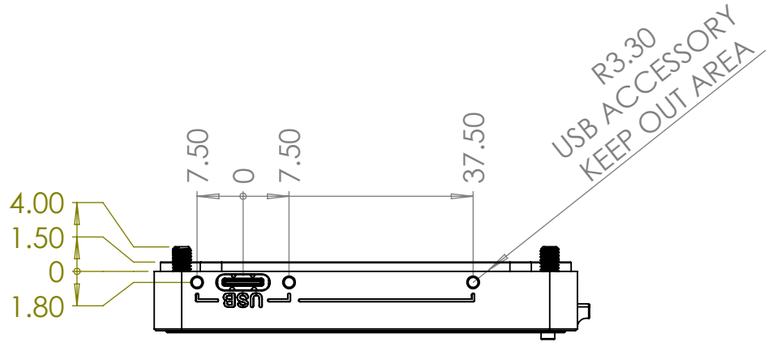

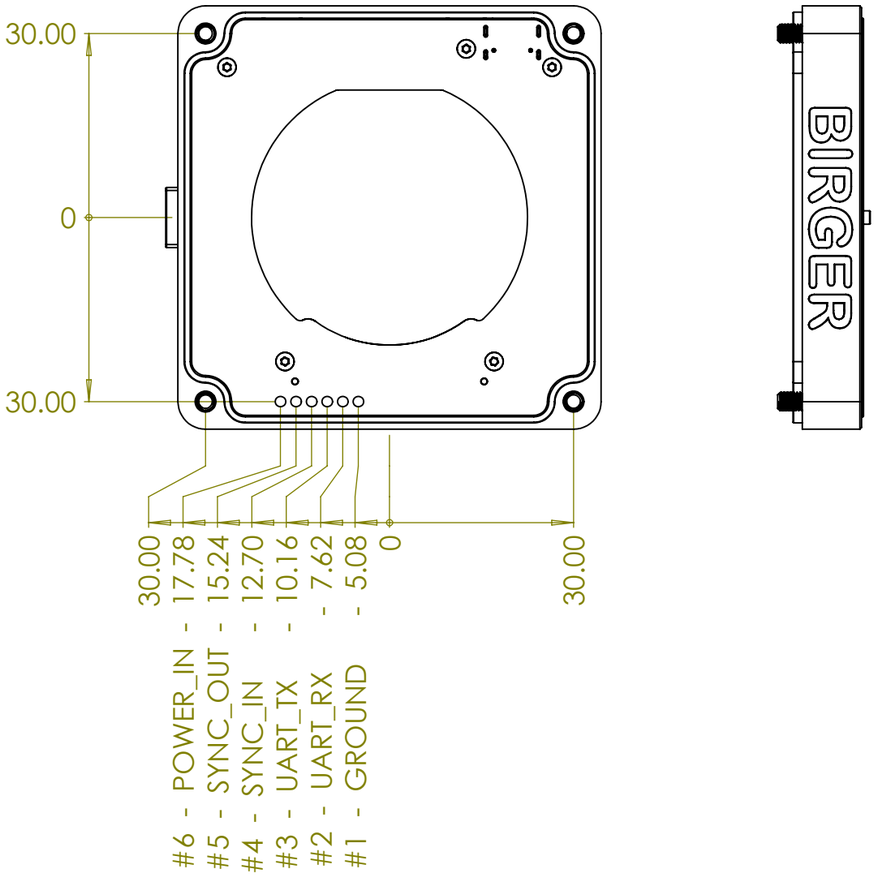

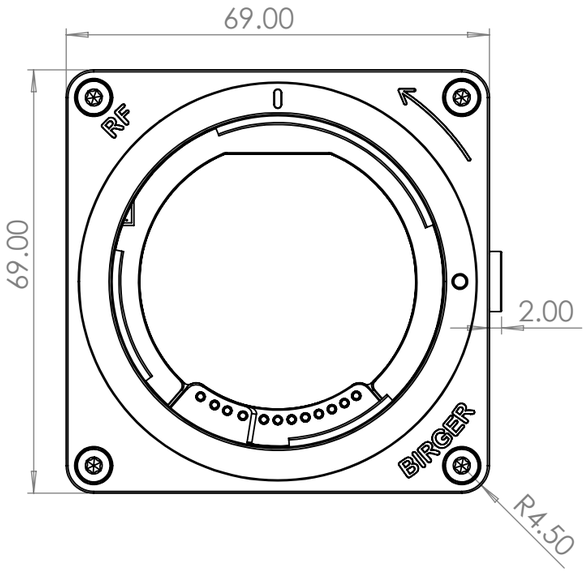

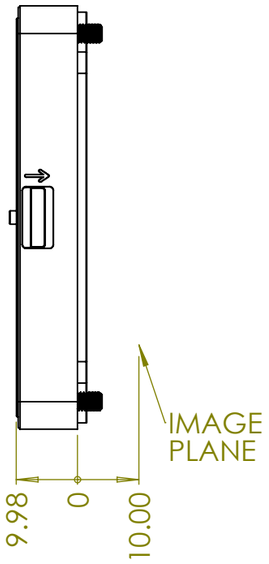

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:	FINISH:		DEBURR AND BREAK SHARP EDGES	BIRGER engineering		
	NAME	SIGNATURE	DATE	TITLE: CanonRF Lens Controller (Birger size BD footprint)		
DRAWN						
CHK'D						
APPV'D						
MFG						
Q.A				MATERIAL:	DWG NO. BD-RF	A3
				WEIGHT:	SCALE:1:1	SHEET 1 OF 4

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Camera Interface Port (6x pogo pads):

Pogo pins on the face of the camera, pads on the Birger device.
Pin pitch is 2.54mm (0.1 in)

pin#, name: description
1. GROUND: power return and ground reference.
2. UART_RX: communication from camera to controller.
3. UART_TX: communication from controller to camera.
4. SYNC_IN: strobe from camera to controller.
5. SYNC_OUT: strobe from controller to camera.
6. POWER_IN: power from camera to controller.

Pins #2-#5 are protected for short to power, as long as the power input is less than 22V. The signaling is 3.3V TTL (verify threshold). Absolute max without damage is 24V. Over voltage protected above 4.7V.

POWER_IN operating range is 5V nominal (4.2V minimum) to 20V nominal (21V max operating, with overvoltage protection to 28V). Absolute max without damage is 28V. Input current is limited to approximately 100mA during boot up, and the maximum current draw is approximately 1.5A. Max power draw is less than 8W.

Power specification for USB-C and Camera Interface Port is the same.

USB-C :

The USB-C port supports USB, and has additional functionality on SBU (only accessible with an accessory module from Birger):
1. TTL UART
2. 10BASE-T1S ethernet
3. CAN
4. Timing synchronization

USB-C VBUS power input will take priority over the Camera Interface Port.

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	NAME	SIGNATURE	DATE			TITLE:	
DRAWN							
CHK'D							
APPV'D							
MFG							
Q.A				MATERIAL:		DWG NO. BD-RF	A3
				WEIGHT:		SCALE:1:1	SHEET 2 OF 4

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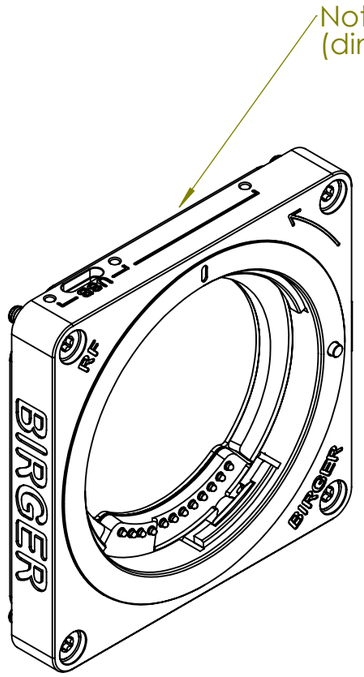

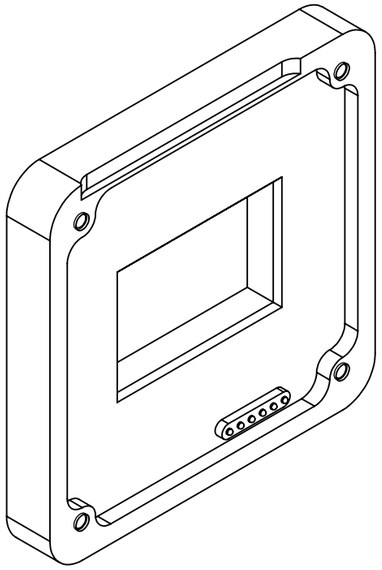

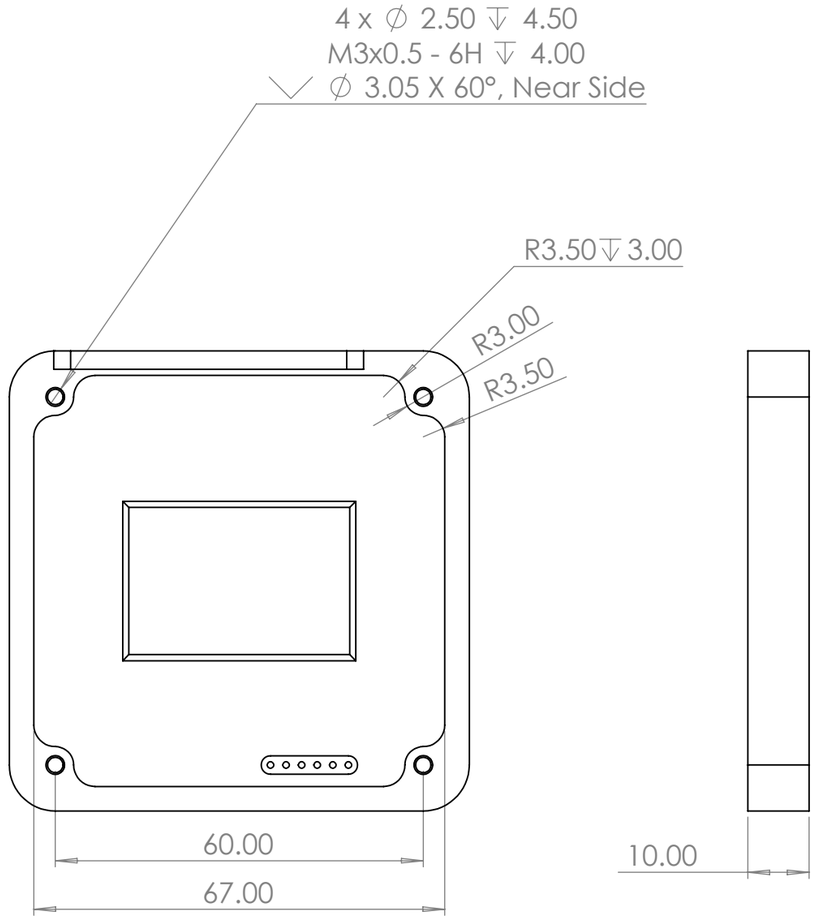

Birger_BD_Camera_Critical_Geometry.STEP:
(available for downlaod from birger.com)

Contains the critical geometry for mating a Birger BD footprint lens controller with an image sensor. The back surface of the model is the image plane. The front surface of the model has the mating features for the Birger controller. This model represents a camera 72mm square front (3mm larger than the controller), to illustrate the necessary keepouts for the USB-C accessories and cables.

The pogo pin height is at the nominal height to mate with the lens controller PCB. The pins should extend (uncompressed at least an additional 0.5mm to account for the tolerances of the Birger assembly (+0.0mm, -0.3mm). Travel length of the pins should be at least 1.0mm if camera tolerances are sufficient that shim washers will not be used between the controller and the camera. If shim washers will be used, additional travel will be required.

The 67mm square pocket (3mm deep, w/ radiused clearances around the mounting holes), is specified at the nominal fit dimension. The pocket should have a slip fit tolerance on this hole. The part from Birger will have a fit class to be specified later. The current target is to be +0, minus 10 microns. The customer tolerance should be similar, or larger, to ensure a slip fit.

The 3mm depth specified for this pocket will allow for all BD-footprint controllers from Birger, to be utilized with a single camera design.

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DRAWN						
CHK'D						
APPV'D						
MFG						
Q.A				MATERIAL:	DWG NO. BD-RF	A3
				WEIGHT:	SCALE:1:1	SHEET 3 OF 4

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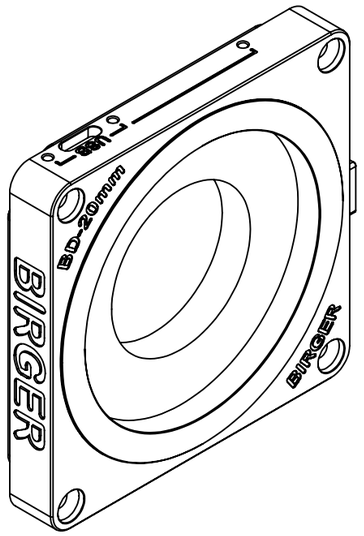

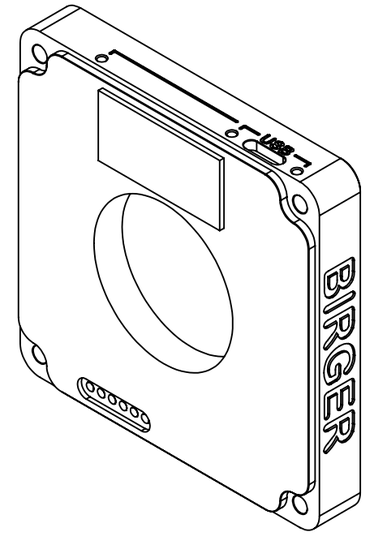

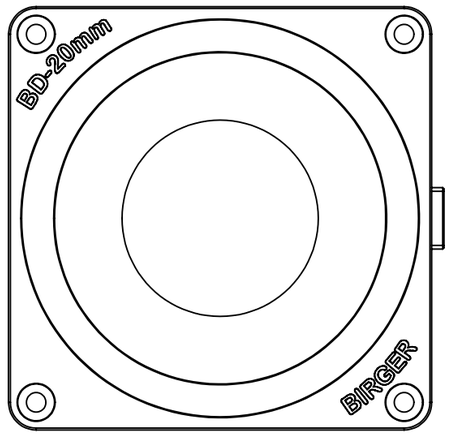

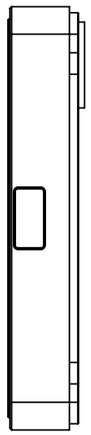

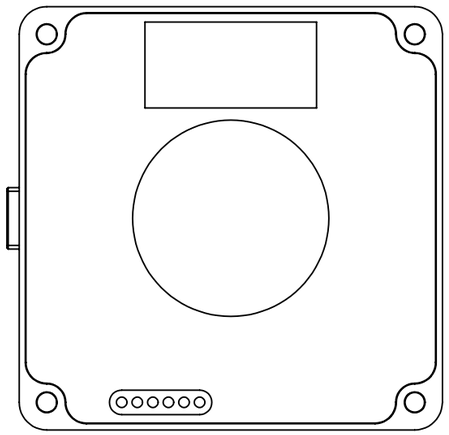

Birger_BD_Family_Critical_Geometry.STEP:
(available for download from birger.com)

Contains the critical geometry for mating a Birger BD footprint lens controller. Various Mirrorless lens platforms exist to support image circles from 21mm (Micro Four Thirds) to 55mm (Medium Format). Birger has a number of additional lens platforms in development. This model is for a 20mm flange distance, and includes all of the additional potential interferences for lens platforms with flange distances down to 16mm (Nikon Z)

All of the offerings from Birger will have this same footprint, electrical and software interface. After Canon RF is in volume production, Micro Four Thirds is the next planned release.

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MFG							
Q.A				MATERIAL:			DWG NO. BD-RF A3
				WEIGHT:		SCALE:1:1	SHEET 4 OF 4

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