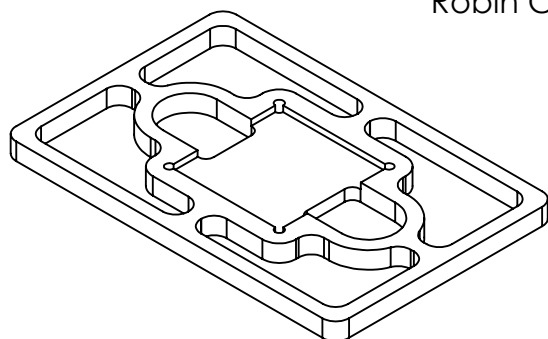
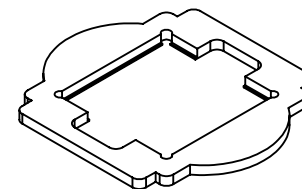


Bespoke Parts for the Direct Library Preparation Plus Single Cell
Method for Takara SmartChips and the Scienion Cellenone
Robot

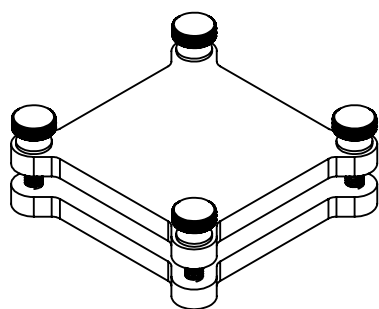
Robin Coope September 19 2019



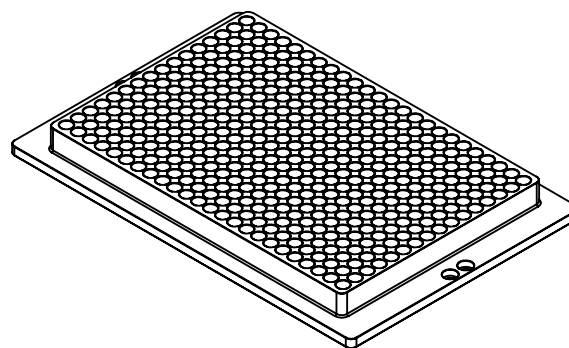
Quick Spin SmartChip Adapter
also SmartChip SBS Plate Adapter



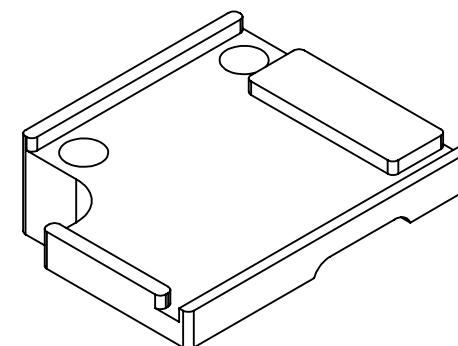
SmartChip Adapter for Nikon
Ti-E Microscope



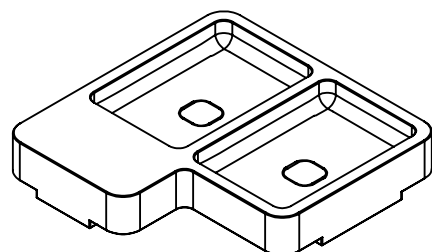
The Yellow Submarine Chip
Sealer



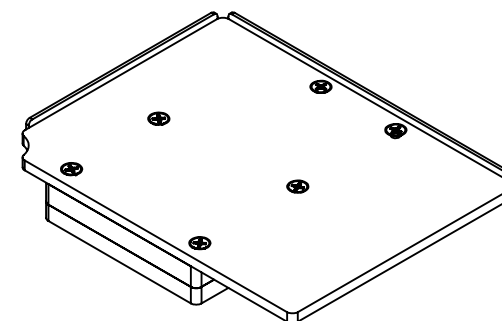
384 Well Plate Chiller Adapter



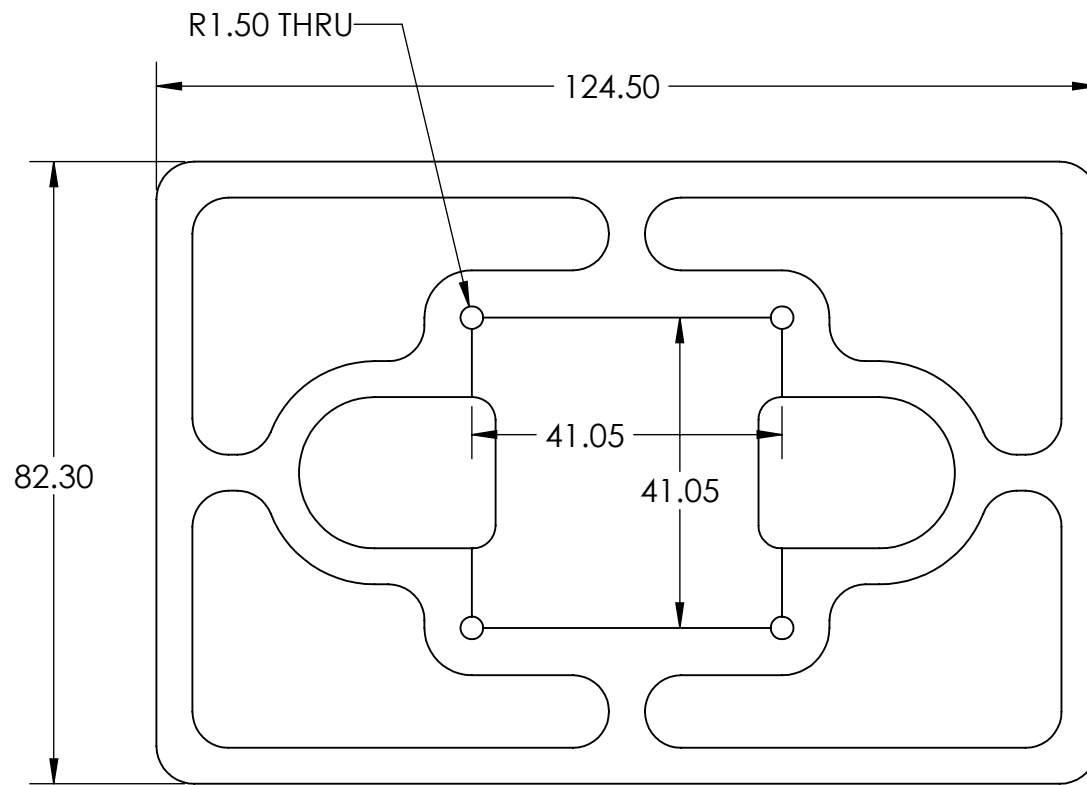
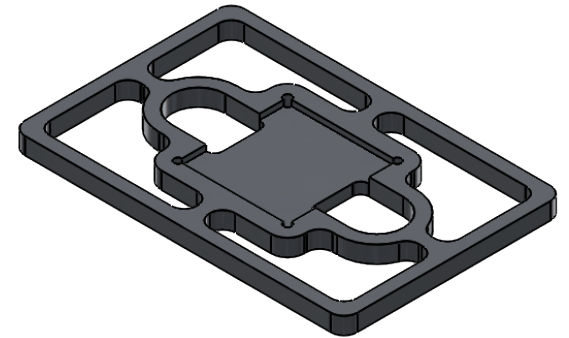
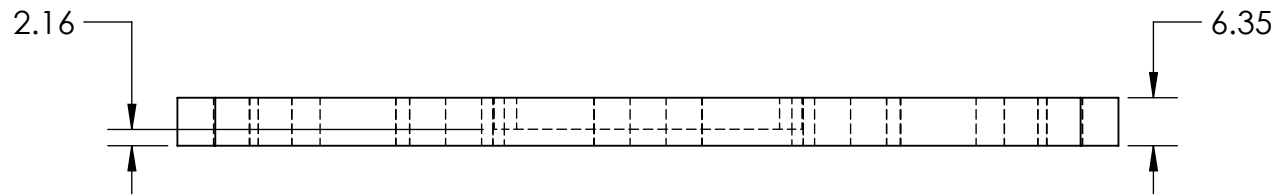
SmartChip Cellenone Cradle
Rev 5.




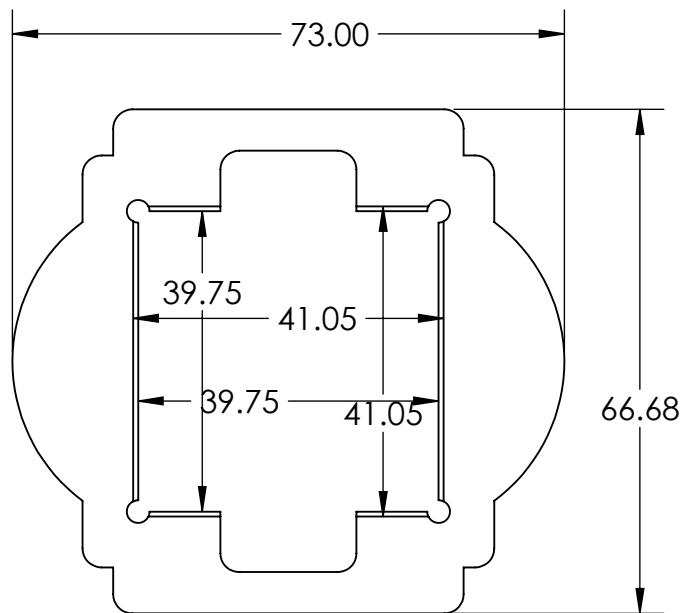
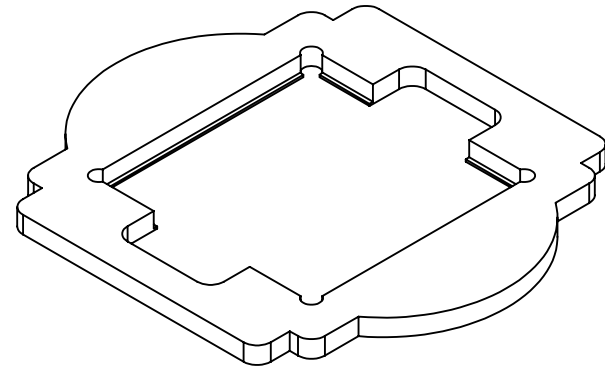
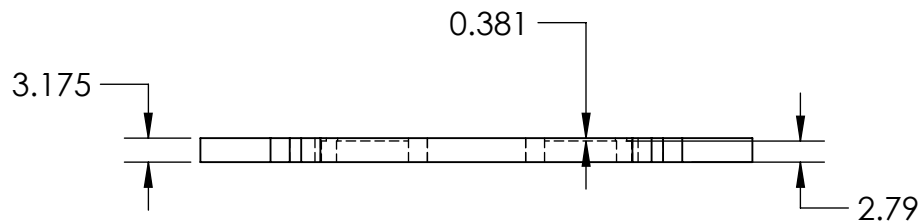
Cellenone Double Reservoir





Cellenone 12 Chip Index
Spotting Adapter

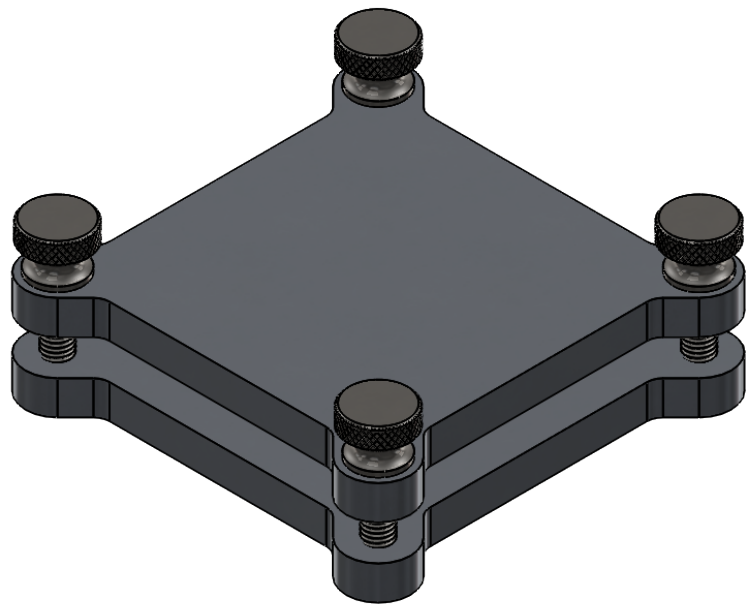




 BC CANCER GENOME SCIENCES CENTRE INSTRUMENTATION GROUP 604-707-5900 EXT 675465		DESCRIPTION:		FILE NUMBER:	
		Quick Spinner Chip Adapter		DRAWN BY: ROBIN COOPE	
THIRD ANGLE PROJECTION		PROJECT:		DATE:	
		DLP+ Bespoke Parts		19/09/2019	
TOLERANCES		MATERIAL STOCK NOTE:		QUANTITY	SCALE
XX	+/- 2	1/4" AL Plate			1:1
XX.X	+/- 0.5	FINISH: POWDERCOAT BLACK		SHEET SIZE	SHEET
XX.XX	+/- 0.1			A	2 OF 17
ANGULAR	+/- 1°				

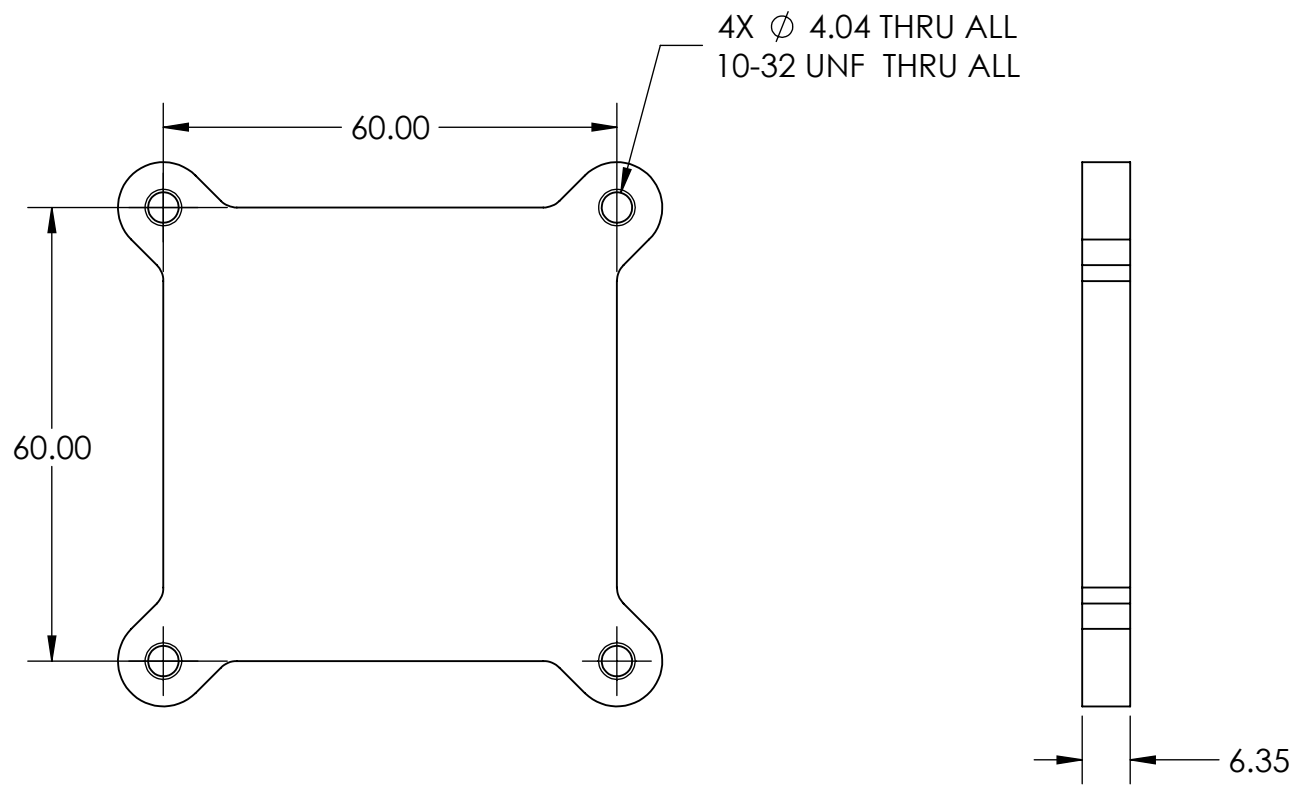




 <div>BC CANCER GENOME SCIENCES CENTRE INSTRUMENTATION GROUP 604-707-5900 EXT 675465</div>		DESCRIPTION: Nikon Microscope Adapter		FILE NUMBER: 	
THIRD ANGLE PROJECTION 		PROJECT: DLP+ Bespoke Parts		DRAWN BY: ROBIN COOPE	
DIMENSIONS IN MM		DATE: 19/09/2019			
TOLERANCES XX +/- 2 XX.X +/- 0.5 XX.XX +/- 0.1 ANGULAR +/- 1°		MATERIAL STOCK NOTE: 1/8" ALuminum		QUANTITY	
FINISH: POWDERCOAT BLACK		NOTES: WJ and paint before machining inner ledge		SCALE 1:1	
				SHEET SIZE A	
				SHEET 3 OF 17	

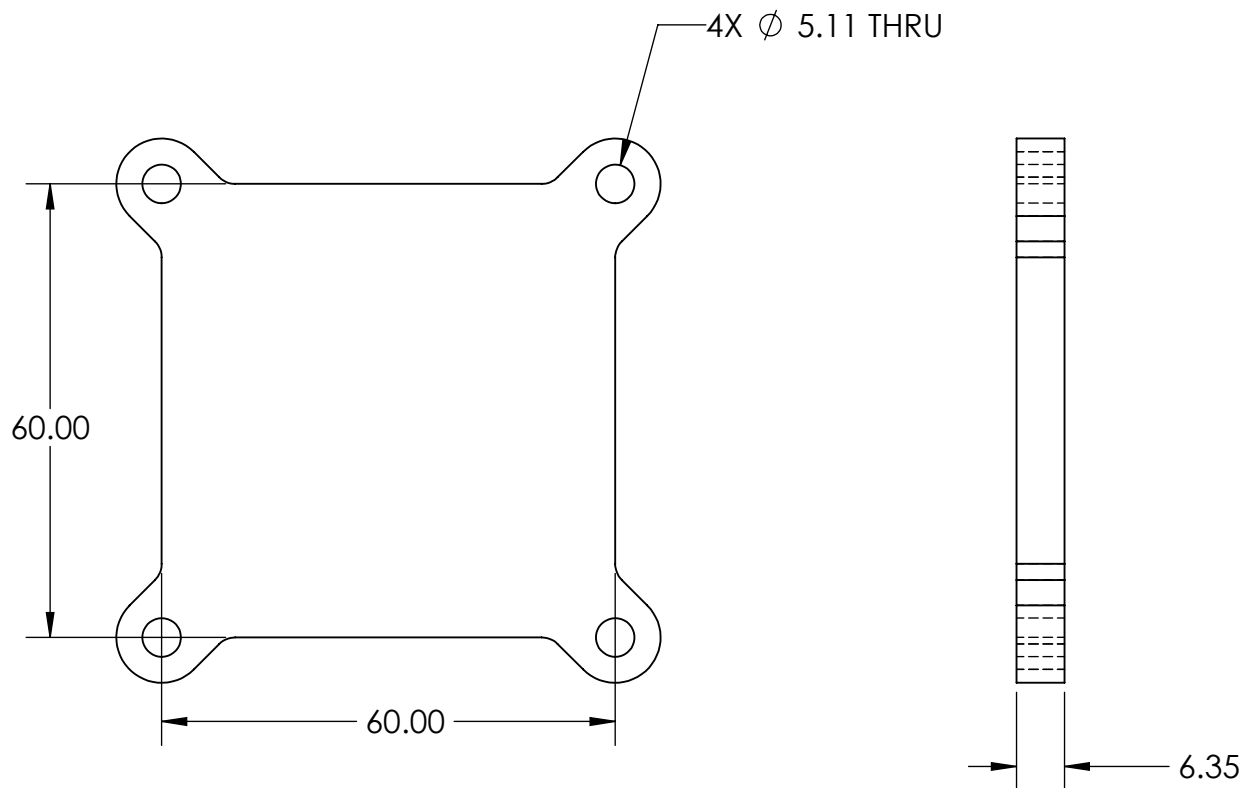
ITEM NO.	DESCRIPTION	QTY.	Vendor	StockNote	Finish
1	Yellow Submarine Base	1		1/4" AL Plate	PCOAT BLACK or YELLOW
2	Yellow Submarine Top	1		1/4" AL Plate	PCOAT BLACK or YELLOW
3	Thumbscrews	4	McMaster Carr	McM 99607A169	PLAIN





 BCCA GENOME SCIENCES CENTRE ENGINEERING TECHNOLOGY DEVELOPMENT 604-707-5900 EXT 5465		DESCRIPTION:	FILE NUMBER:	
		Submarine Assembly	DRAWN BY: Robin Coope	
THIRD ANGLE PROJECTION 	DIMENSIONS IN MM	PROJECT: DLP+ Yellow Submarine	DATE: 19/09/2019	
TOLERANCES	MATERIAL STOCK NOTE:	NOTES:	QUANTITY	SCALE
XX +/- 2	FINISH:		1	1:1
XX.X +/- 0.5			SHEET SIZE	SHEET
XX.XX +/- 0.1			A	4 OF 17
ANGULAR +/- 1°				

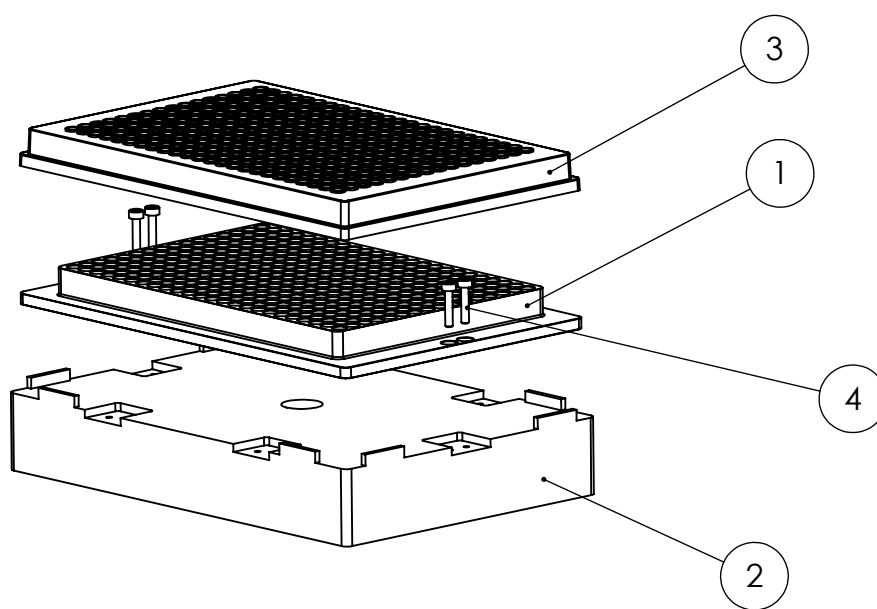




 <div>BC CANCER GENOME SCIENCES CENTRE INSTRUMENTATION GROUP 604-707-5900 EXT 675465</div>		DESCRIPTION: Yellow Submarine Base		FILE NUMBER:	
<div>THIRD ANGLE PROJECTION</div> 		PROJECT: DLP+ Yellow Submarine		DRAWN BY: ROBIN COOPE	
				DATE: 19/09/2019	
DIMENSIONS IN MM		NOTES:		QUANTITY	
TOLERANCES		MATERIAL STOCK NOTE:		SCALE	
XX +/- 2		1/4" AL Plate		1:1	
XX.X +/- 0.5		FINISH:		SHEET SIZE	
XX.XX +/- 0.1		PCOAT BLACK or YELLOW		SHEET	
ANGULAR +/- 1°				A	
				5 OF 17	

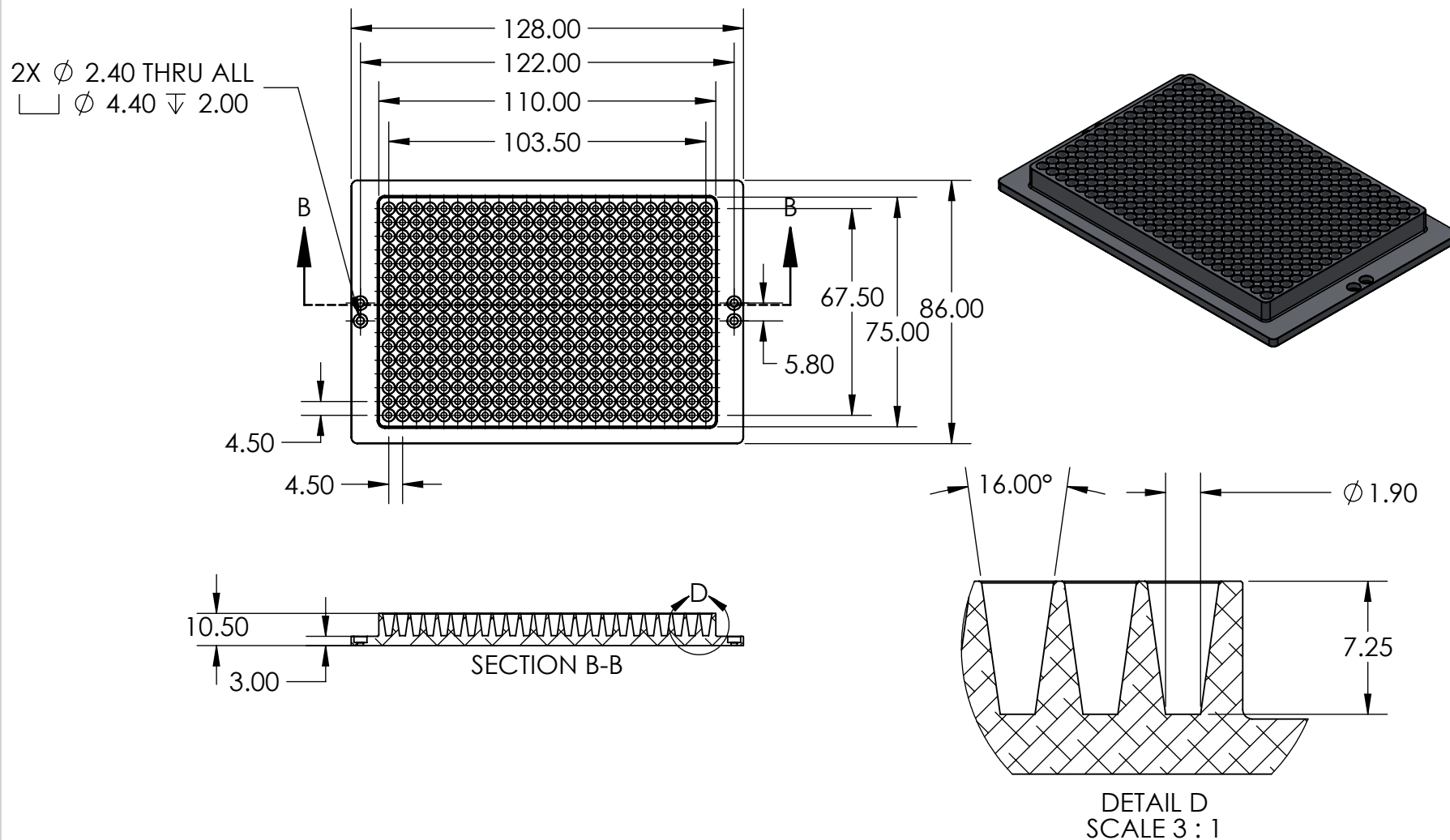


<div></div> <div>BC CANCER GENOME SCIENCES CENTRE INSTRUMENTATION GROUP 604-707-5900 EXT 675465</div>		DESCRIPTION: Yellow Submarine Top		FILE NUMBER:	
<div>THIRD ANGLE PROJECTION</div> <div></div>		PROJECT: DLP+ Yellow Submarine		DRAWN BY: ROBIN COOPE	
		DATE: 19/09/2019			
DIMENSIONS IN MM		NOTES:		QUANTITY	SCALE
TOLERANCES		MATERIAL STOCK NOTE: 1/4" AL Plate		1:1	
XX +/- 2					
XX.X +/- 0.5					
XX.XX +/- 0.1					
FINISH:		SHEET SIZE		SHEET	
PCOAT BLACK or YELLOW		A		6 OF 17	

ITEM NO.	DESCRIPTION	QTY.	PART NO.	Vendor	StockNote	Finish
1	Sciflex 384 Chiller Adapter Plate	1	Rev 1.1	GSC	1/2" AL Plate	PLAIN
2	Sciflex Chiller Base	1		Scienion		
3	Armadillo 384 PCR Plate	1				
4	M2 Screws	4				





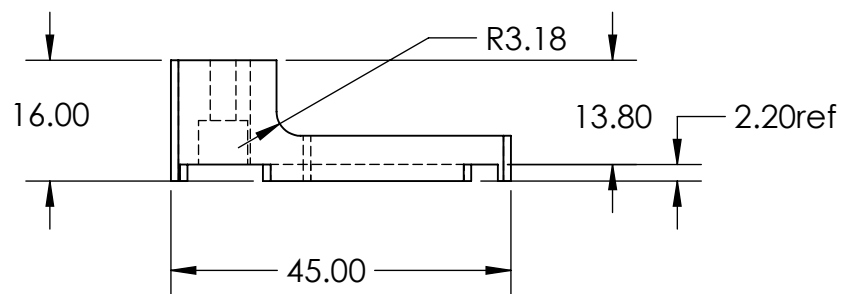
 BC CANCER GENOME SCIENCES CENTRE INSTRUMENTATION GROUP 604-707-5900 EXT 675465	DESCRIPTION: Sciflex 384 Well Chiller Adapter Assembly		FILE NUMBER: Rev 1	
	PROJECT: Sciflex 384 Well Chiller Adapter		DRAWN BY: Phil Tsao	
THIRD ANGLE PROJECTION		DATE: 19/09/2019		QUANTITY 1
DIMENSIONS IN MM		NOTES:		SCALE 1:2
TOLERANCES XX +/- 2 XX.X +/- 0.5 XX.XX +/- 0.1 ANGULAR +/- 1°		MATERIAL STOCK NOTE: FINISH:		SHEET SIZE A
				SHEET 7 OF 17



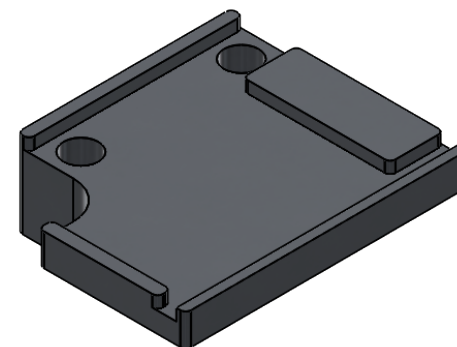
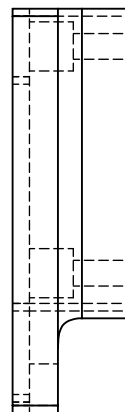
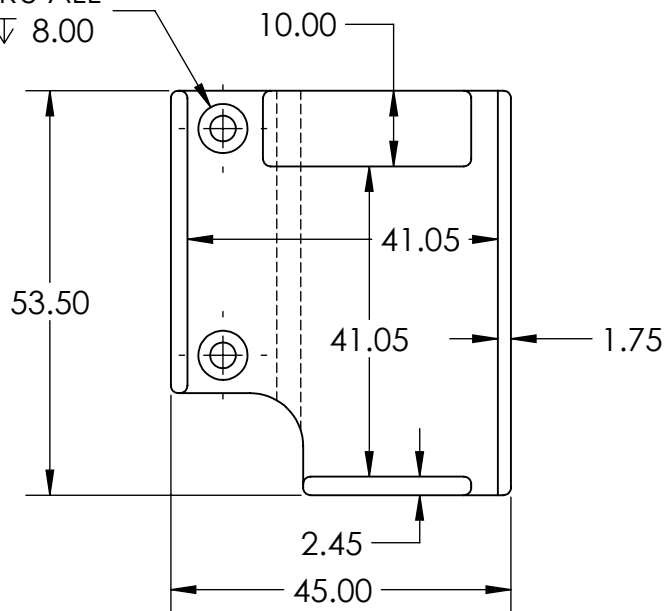
NOTES:



- Remove all burrs and sharp edges
- Anodize clear (Type II, Class I, 0.5 thou coating thickness)
- Ensure smooth surface finish on bottom for thermal transfer

 <p>BC CANCER GENOME SCIENCES CENTRE INSTRUMENTATION GROUP 604-707-5900 EXT 675465</p>	<p>DESCRIPTION:</p> <p>Sciflex 384 Chiller Adapter Plate</p>		<p>FILE NUMBER:</p> <p>Rev 1.1</p>	
	<p>PROJECT:</p> <p>DLP+ Bespoke Parts</p>		<p>DRAWN BY:</p> <p>PHIL TSAO</p>	
<p>THIRD ANGLE PROJECTION</p> 	<p>DIMENSIONS IN MM</p>		<p>DATE:</p> <p>19/09/2019</p>	
<p>TOLERANCES</p> <p>XX +/- 2</p> <p>XX.X +/- 0.5</p> <p>XX.XX +/- 0.1</p> <p>ANGULAR +/- 1°</p>	<p>MATERIAL STOCK NOTE:</p> <p>1/2" AL Plate</p>		<p>QUANTITY</p> <p>SCALE</p> <p>1:2</p>	<p>SHEET</p> <p>8 OF 17</p>
<p>FINISH:</p> <p>PLAIN</p>		<p>NOTES:</p>		<p>SHEET SIZE</p> <p>A</p>

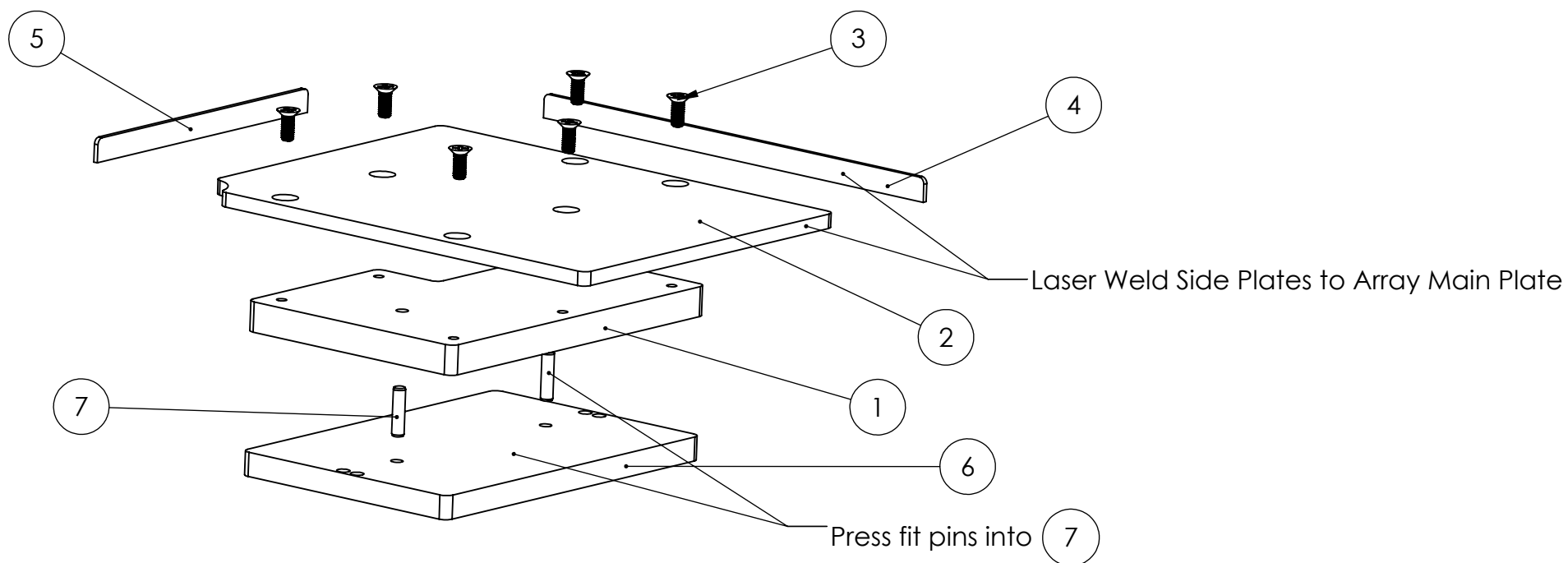




2X \varnothing 3.40 THRU ALL
 \sqcap \varnothing 6.50 ∇ 8.00

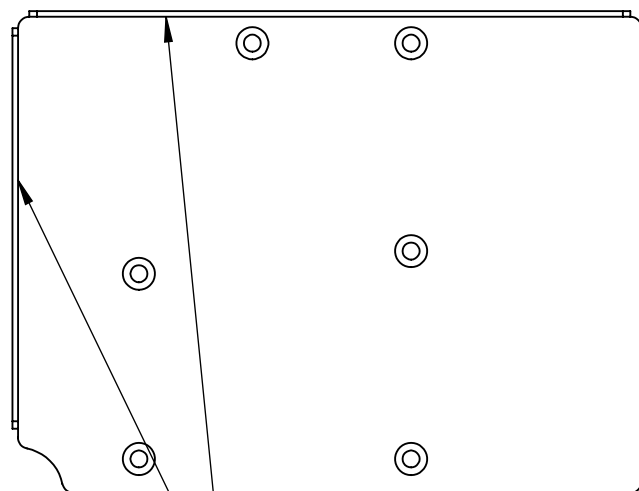


 BC CANCER GENOME SCIENCES CENTRE INSTRUMENTATION GROUP 604-707-5900 EXT 675465		DESCRIPTION:		FILE NUMBER:	
		Cellenone Chip Mount R4		DRAWN BY: ROBIN COOPE	
THIRD ANGLE PROJECTION 		PROJECT:		DATE:	
DIMENSIONS IN MM		DLP+ Bespoke Parts		19/09/2019	
TOLERANCES		MATERIAL STOCK NOTE:		QUANTITY	SCALE
XX	+/- 2	3/4" AL Plate			1:1
XX.X	+/- 0.5	FINISH:		SHEET SIZE	SHEET
XX.XX	+/- 0.1	PLAIN		A	9 OF 17
ANGULAR	+/- 1°				

ITEM NO.	DESCRIPTION	QTY.	PART NO.	StockNote	Finish
1	Array Support Plate	1		1/2" AL Plate	POWDERCOAT BLACK
2	Array Main Plate	1		3/16" SS Plate	PLAIN
3	M4x10mm FHCS	6	McM 9210A220	McM 9210A220	PLAIN
4	Long Side Plate	1		16Ga 304SS	PLAIN
5	Short Side Plate	1		16Ga Stainless	PLAIN
6	12 Chip Cellenone Adapter Plate	1	Rev 1.1	1/2" AL Plate	POWDERCOAT BLACK
7	4x16mm Collimator Alignment Pins	2	McM 93600A437	McM 93600A437	PLAIN

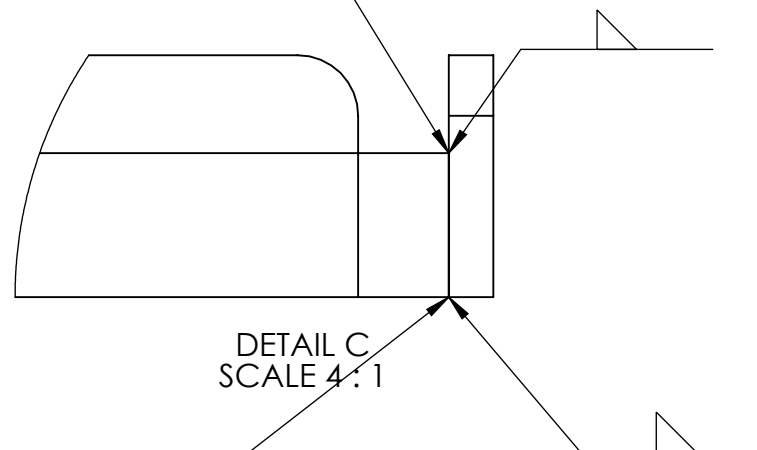


 BC CANCER GENOME SCIENCES CENTRE INSTRUMENTATION GROUP 604-707-5900 EXT 675465		DESCRIPTION:	FILE NUMBER:	
			DRAWN BY:	
THIRD ANGLE PROJECTION		DIMENSIONS IN MM	PROJECT:	DATE: 19/09/2019
TOLERANCES	MATERIAL STOCK NOTE:	NOTES:	QUANTITY	SCALE
XX +/- 2	FINISH:	Designed as an all-waterjet project	1	1:2
XX.X +/- 0.5			SHEET SIZE	SHEET
XX.XX +/- 0.1			A	10 OF 17
ANGULAR +/- 1°				



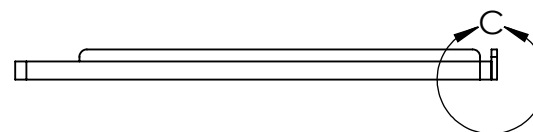
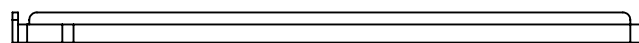
Machine waterjet edges perpendicular before welding

Laser sized fillet OK here



DETAIL C
SCALE 4:1

These plates to be laser welded every ~10mm
Side plates are flush with bottom of main plate



BC CANCER GENOME SCIENCES CENTRE
INSTRUMENTATION GROUP
604-707-5900 EXT 675465

THIRD ANGLE
PROJECTION



DIMENSIONS IN MM

TOLERANCES
XX ± 2
XX.X ± 0.5
XX.XX ± 0.1
ANGULAR $\pm 1^\circ$

MATERIAL STOCK NOTE:

FINISH:

DESCRIPTION:

PROJECT:

NOTES:

Designed as an all-waterjet
project

FILE NUMBER:

DRAWN BY:

DATE:

19/09/2019

QUANTITY
1

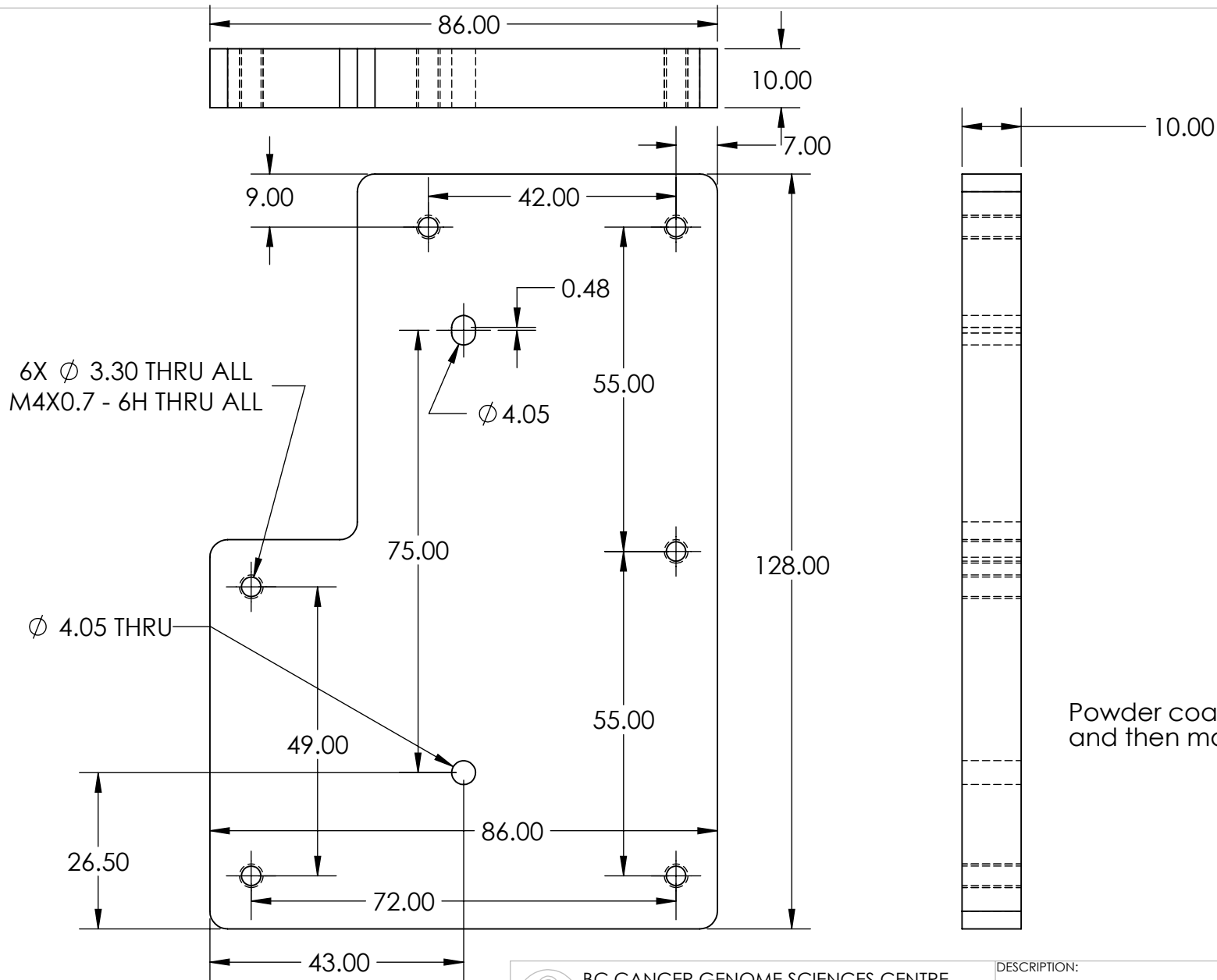
SCALE
1:2

SHEET SIZE



A

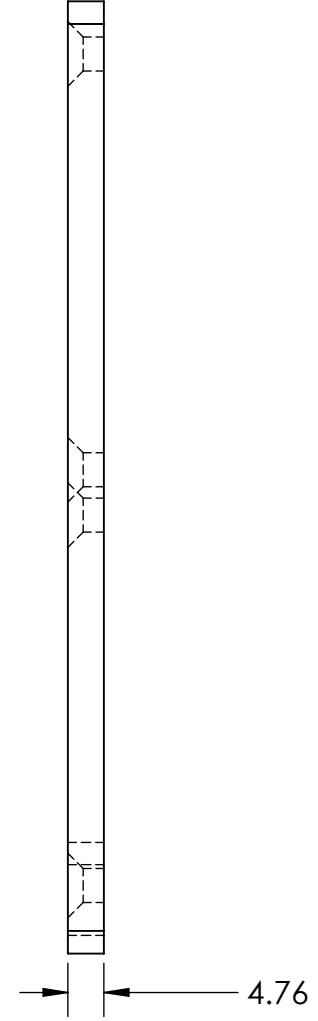
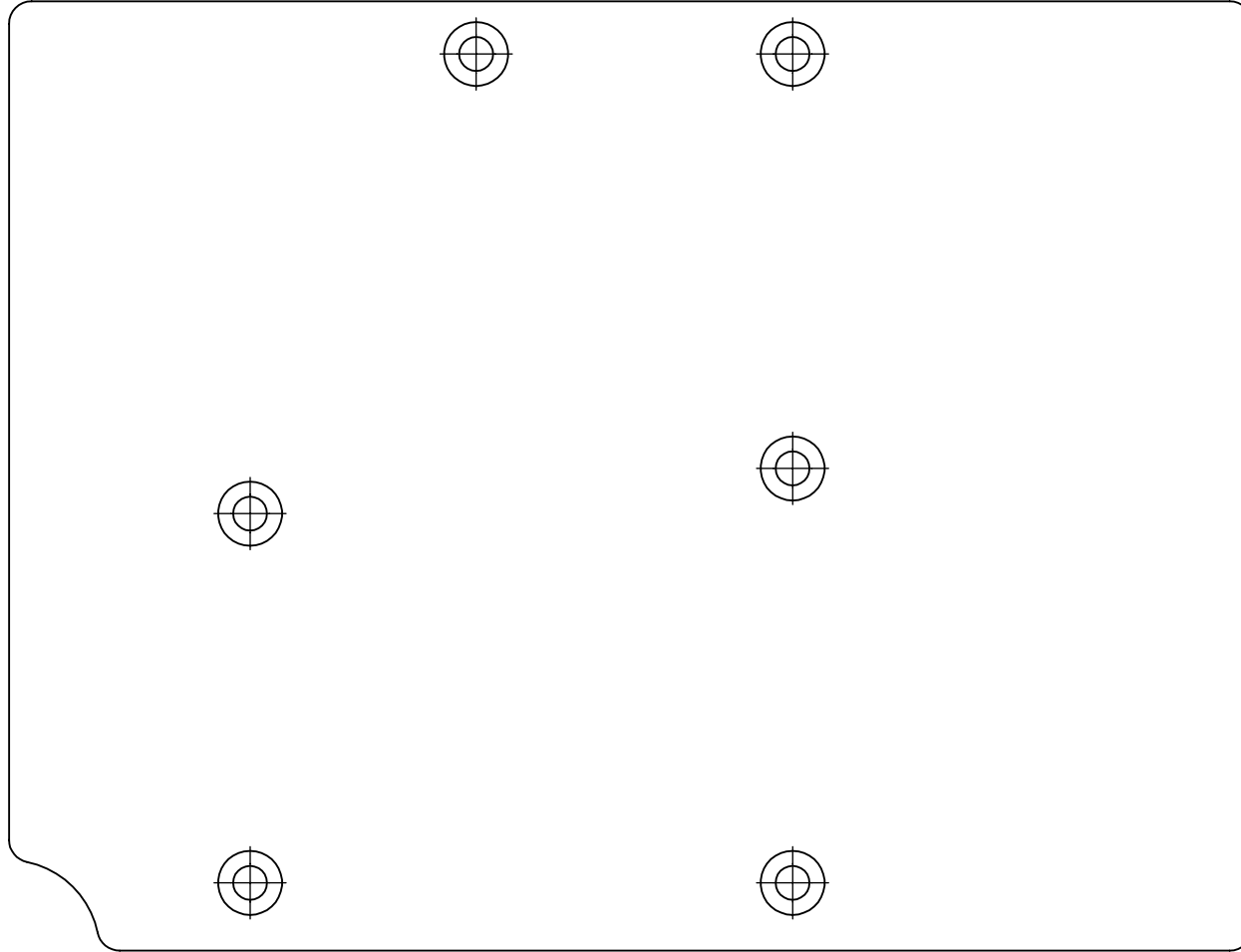
SHEET



11 OF 17

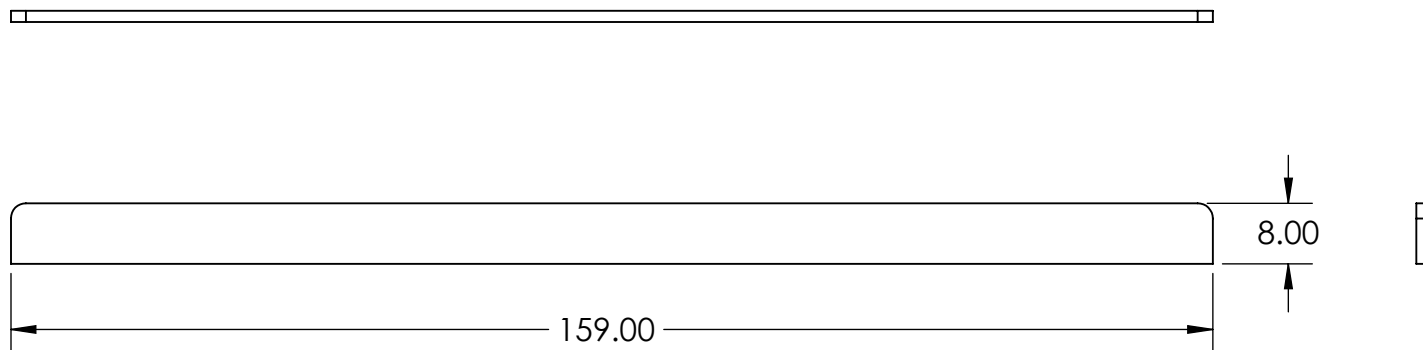




Powder coat after waterjet and then machine to thickness.

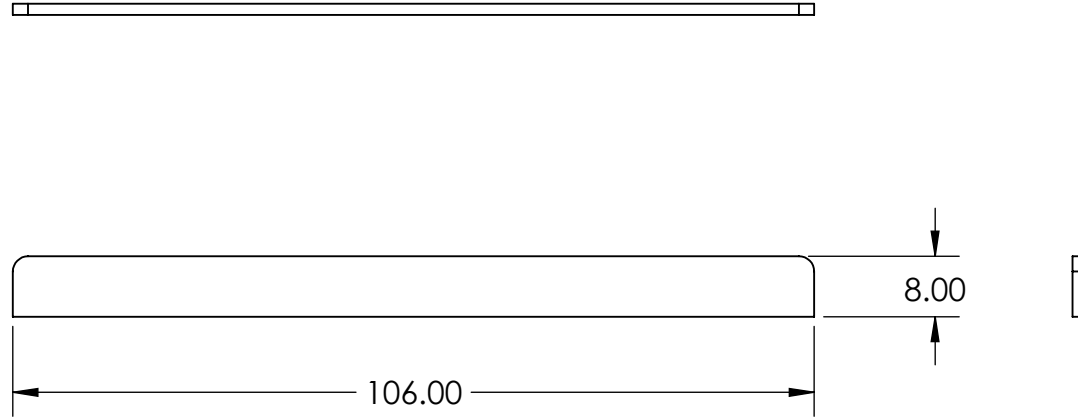
 BC CANCER GENOME SCIENCES CENTRE INSTRUMENTATION GROUP 604-707-5900 EXT 675465	DESCRIPTION:		FILE NUMBER:	
	Array Support Plate		DRAWN BY: ROBIN COOPE	
THIRD ANGLE PROJECTION 	PROJECT:		DATE:	
	Cellenone Primer Array Plate		19/09/2019	
TOLERANCES XX +/- 2 XX.X +/- 0.5 XX.XX +/- 0.1 ANGULAR +/- 1°	MATERIAL STOCK NOTE:		QUANTITY	SCALE
	1/2" AL Plate			1:1
FINISH:		NOTES:		SHEET SIZE
POWDERCOAT BLACK				A
			SHEET	12 OF 17





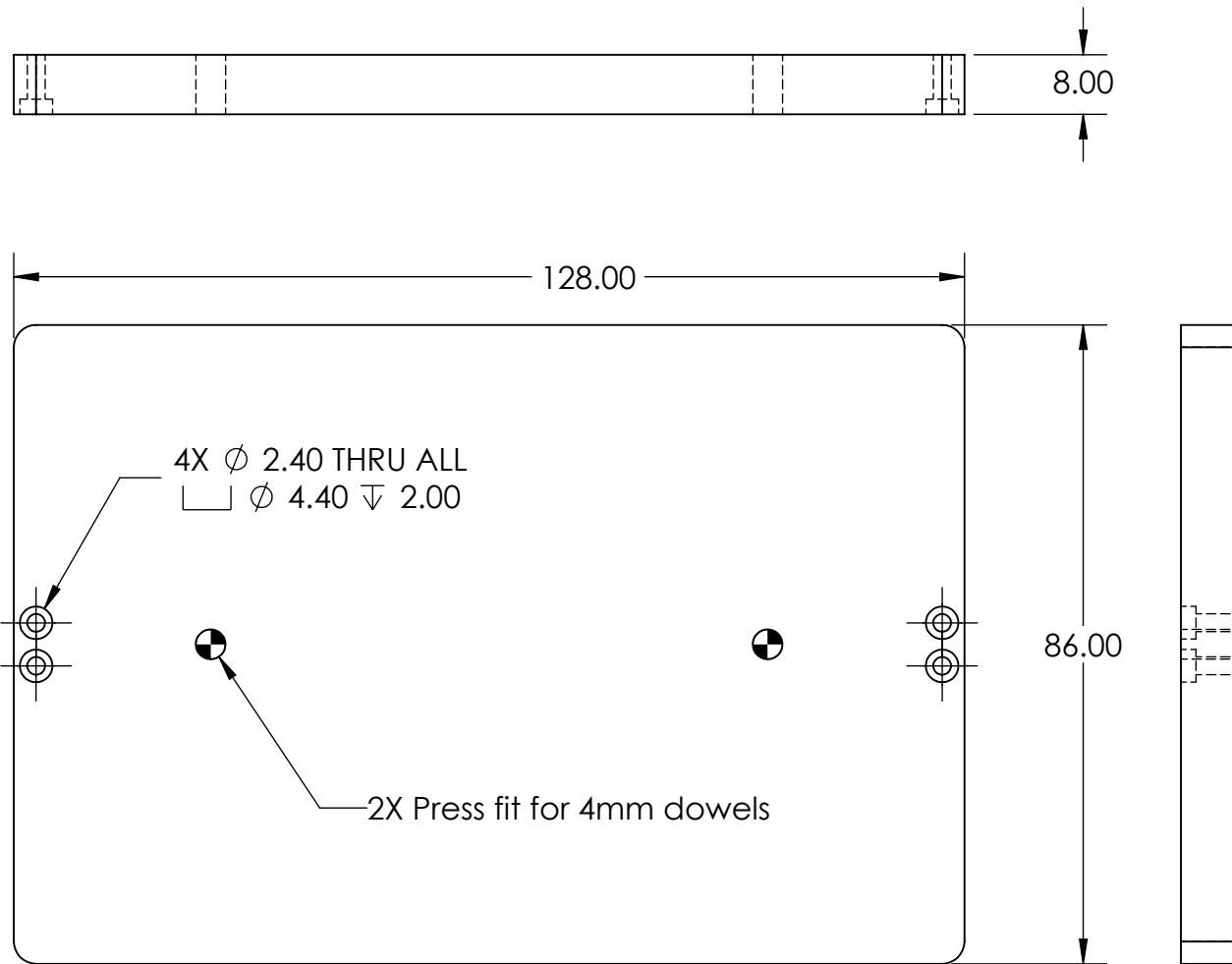
 <div>BC CANCER GENOME SCIENCES CENTRE INSTRUMENTATION GROUP 604-707-5900 EXT 675465</div>		DESCRIPTION: <div>Array Main Plate</div>		FILE NUMBER:			
<div>THIRD ANGLE PROJECTION</div> 		PROJECT: <div>Cellenone Primer Array Plate</div>		DRAWN BY: <div>ROBIN COOPE</div>			
				DATE: <div>19/09/2019</div>			
TOLERANCES		NOTES:		QUANTITY		SCALE	
XX <div>+/- 2</div>						1:1	
XX.X <div>+/- 0.5</div>							
XX.XX <div>+/- 0.1</div>							
ANGULAR <div>+/- 1°</div>				SHEET SIZE		SHEET	
				A		13 OF 17	
MATERIAL STOCK NOTE: <div>3/16" SS Plate</div>							
FINISH: <div>PLAIN</div>							





<div></div> <div>BC CANCER GENOME SCIENCES CENTRE INSTRUMENTATION GROUP 604-707-5900 EXT 675465</div>		DESCRIPTION: Long Side Plate	FILE NUMBER:		
<div>THIRD ANGLE PROJECTION</div> <div></div>		PROJECT: Cellenone Primer Array Plate	DRAWN BY: ROBIN COOPE		
			DATE: 19/09/2019		
DIMENSIONS IN MM		NOTES:	QUANTITY		SCALE
TOLERANCES			See BOM		1:1
XX	+/- 2		MATERIAL STOCK NOTE:		
XX.X	+/- 0.5		16Ga 304SS		
XX.XX	+/- 0.1		FINISH:		
ANGULAR	+/- 1°	PLAIN		SHEET SIZE	SHEET
				A	14 OF 17

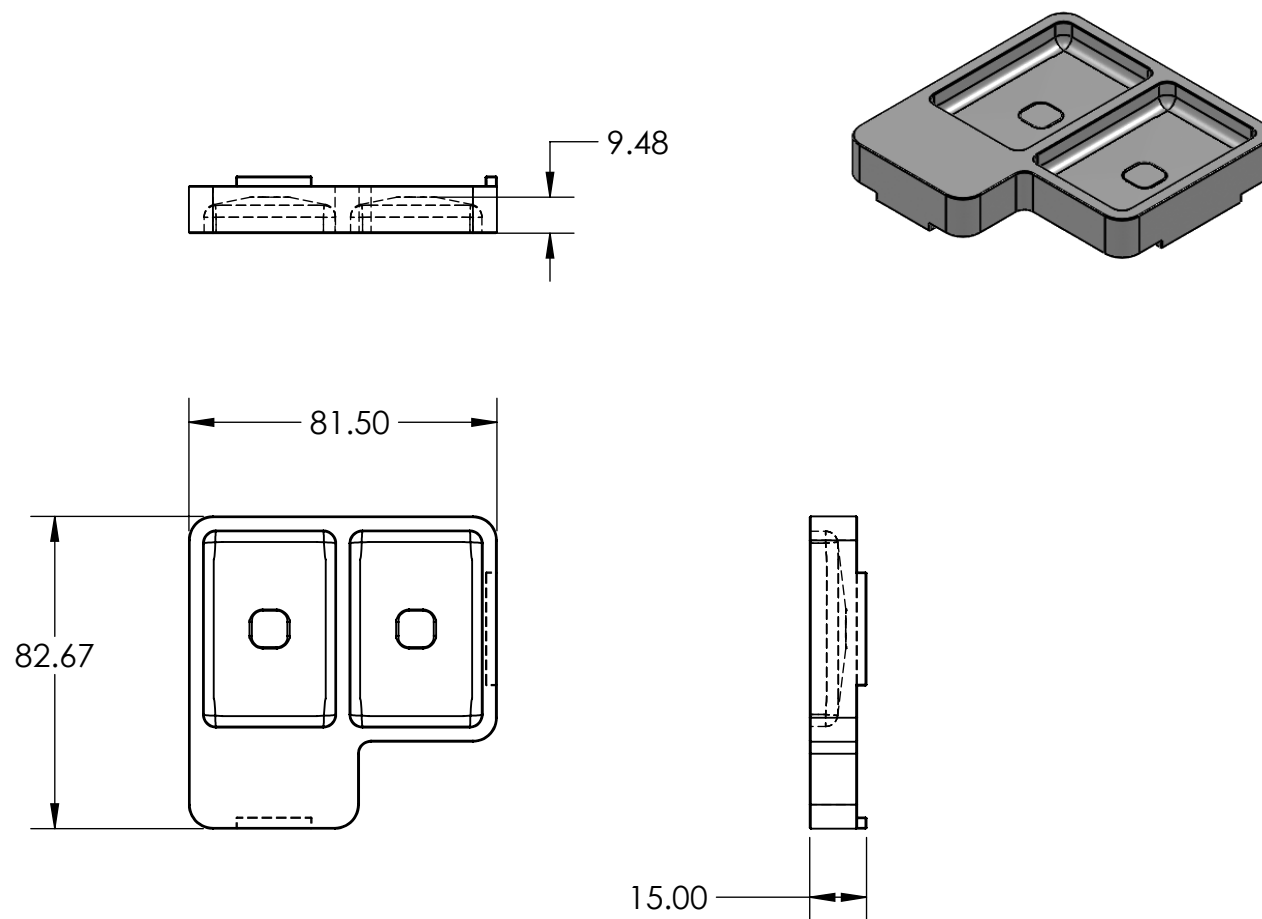




<div></div> <div>BC CANCER GENOME SCIENCES CENTRE INSTRUMENTATION GROUP 604-707-5900 EXT 675465</div>		DESCRIPTION: Short Side Plate	FILE NUMBER:	
			DRAWN BY: ROBIN COOPE	
THIRD ANGLE PROJECTION		PROJECT: Cellenone Primer Array Plate	DATE: 19/09/2019	
DIMENSIONS IN MM				
TOLERANCES		NOTES:	QUANTITY	SCALE
XX	+/- 2		See BOM	1:1
XX.X	+/- 0.5			
XX.XX	+/- 0.1			
ANGULAR	+/- 1°		SHEET SIZE	SHEET
MATERIAL STOCK NOTE: 16Ga Stainless			A	15 OF 17
FINISH: PLAIN				



Powder Coat then machine after to thickness

 BCCA GENOME SCIENCES CENTRE ENGINEERING TECHNOLOGY DEVELOPMENT 604-707-5900 EXT 5465	DESCRIPTION: 12 Chip Cellenone Adapter Plate		FILE NUMBER: Rev 1.1	
	PROJECT: DLP+ Bespoke Parts		DRAWN BY: PHIL TSAO	
THIRD ANGLE PROJECTION 	DIMENSIONS IN MM		DATE: 19/09/2019	
TOLERANCES XX \pm 2 XX.X \pm 0.5 XX.XX \pm 0.1 ANGULAR \pm 1°	MATERIAL STOCK NOTE: 1/2" AL Plate FINISH: POWDERCOAT BLACK		QUANTITY	SCALE 1:1
			SHEET SIZE A	SHEET 16 OF 17



<div></div> <div>BC CANCER GENOME SCIENCES CENTRE INSTRUMENTATION GROUP 604-707-5900 EXT 675465</div>		DESCRIPTION: Twin Reservoir	FILE NUMBER: Rev 2	
THIRD ANGLE PROJECTION <div></div>		PROJECT: DLP+ Bespoke Parts	DRAWN BY: ROBIN COOPE	
DIMENSIONS IN MM		NOTES:	DATE: 19/09/2019	
TOLERANCES			QUANTITY	SCALE
XX	+/- 2			1:2
XX.X	+/- 0.5			
XX.XX	+/- 0.1		SHEET SIZE	SHEET
ANGULAR	+/- 1°		A	17 OF 17
MATERIAL STOCK NOTE: 3/4" PTFE				
FINISH: PLAIN				