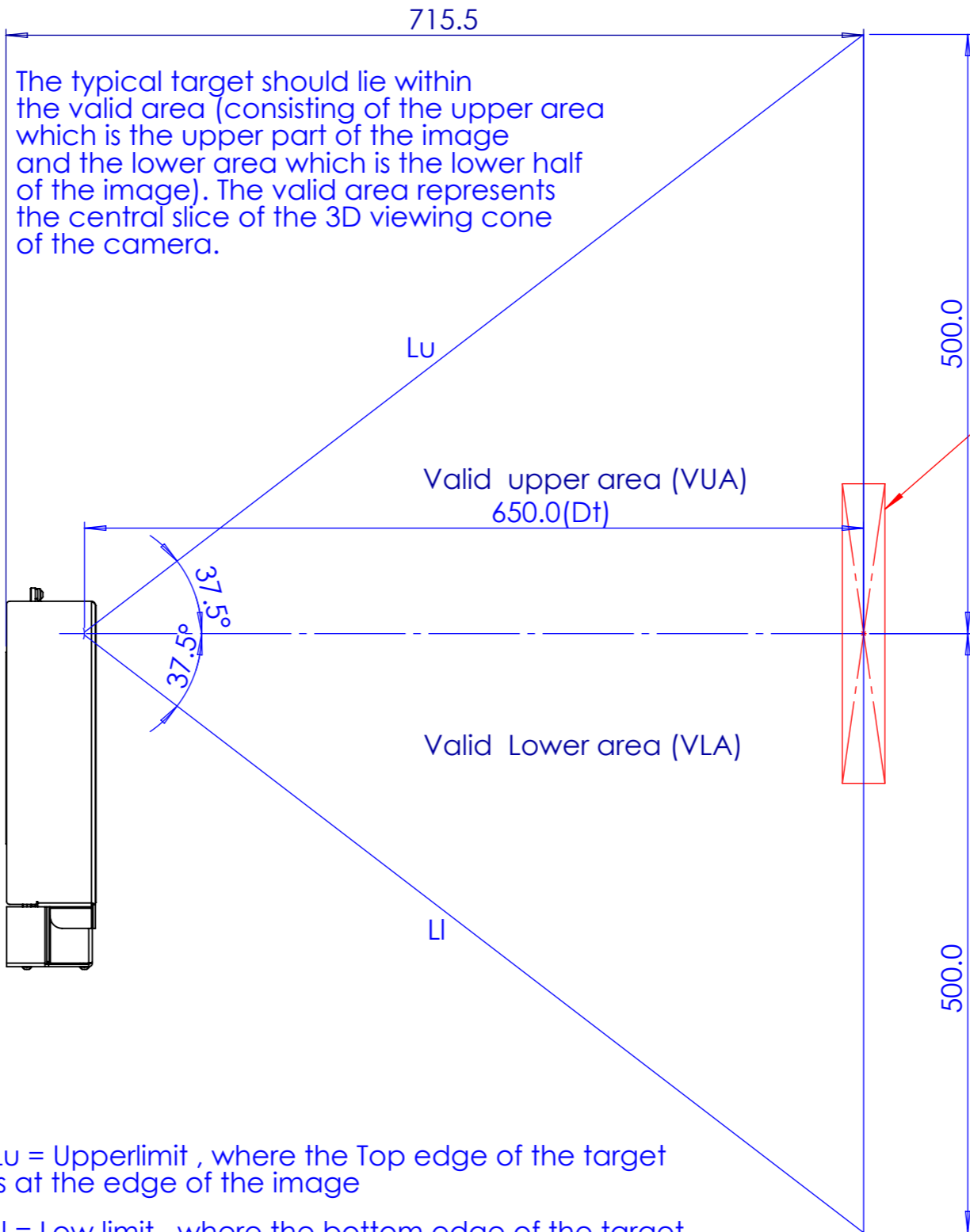


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	PSI_420_CORE_01	BT420 core assembly	1
2	PSI_420_CCVR_02	BT420 cable cover	1
3	WRL_5_D_S_2		1
4	M4 Hex M-F 50mm	spacer m/f 50mm	3
5	ISO 7380 - M4 x 8 - 8N		3

FINISH: DEBURR AND BREAK SHARP EDGES		<b>Perception Sensors &amp; Instrumentation LTD.</b>	
Description: BT420		REVISION: 1	
NAME: A Hyde	SIGNATURE:	DATE: 12/09/2023	PSI_BT420_01
CHK'D: J Hyde		12/09/2023	A3
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS and degrees TOLERANCES: LINEAR: 0.1 ANGULAR: 0.5		MATERIAL: WEIGHT: 5206.9	SCALE: 1:5 DO NOT SCALE DRAWING SHEET 1 OF 4
<p style="text-align: center;"><b>PROPRIETARY AND CONFIDENTIAL</b></p> <p style="text-align: center;">THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF PERCEPTION SENSORS &amp; INSTRUMENTATION LTD. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF PERCEPTION SENSORS &amp; INSTRUMENTATION LTD. IS PROHIBITED.</p>			



The typical target should lie within the valid area (consisting of the upper area which is the upper part of the image and the lower area which is the lower half of the image). The valid area represents the central slice of the 3D viewing cone of the camera.

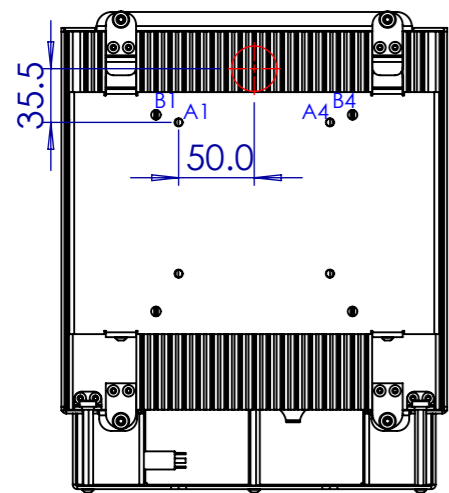
Typical target of 250 mm height

The closer the target is to the camera the less height variation is allowable, at distance of 650mm from the camera (715.5 from the mounting surface) the valid height range is ~1m centred on the camera.

$$H_v = 2 * D_t * \tan(37.3)$$

$H_v$  = valid height range  
 $D_t$  = distance to target

The relative position of mounting hole A1 to the center of the camera.



$$U_l = H_c + (D_t * \tan(37.5))$$

$$L_l = H_c - (D_t * \tan(37.5))$$

$$H_c = H_a + 35.5$$

$$H_c = H_b + 30.5$$

$$L_l = (H_b + 30.5) - (D_t * \tan(37.5))$$

$$U_l = (H_b + 30.5) + (D_t * \tan(37.5))$$

$$L_l = (H_a + 30.5) - (D_t * \tan(37.5))$$

$$U_l = (H_a + 30.5) + (D_t * \tan(37.5))$$

$U_l$  = Upper limit, where the Top edge of the target is at the edge of the image  
 $L_l$  = Low limit, where the bottom edge of the target is at the edge of the image  
 $H_c$  = Height of camera  
 $H_b$  = Height of upper B wall mount holes (B1/B4)  
 $H_a$  = Height of upper A wall mount holes (A1/A4)

FINISH:			DEBURR AND BREAK SHARP EDGES
NAME	SIGNATURE	DATE	
DRAWN	A Hyde	12/09/2023	
CHK'D	J Hyde	12/09/2023	

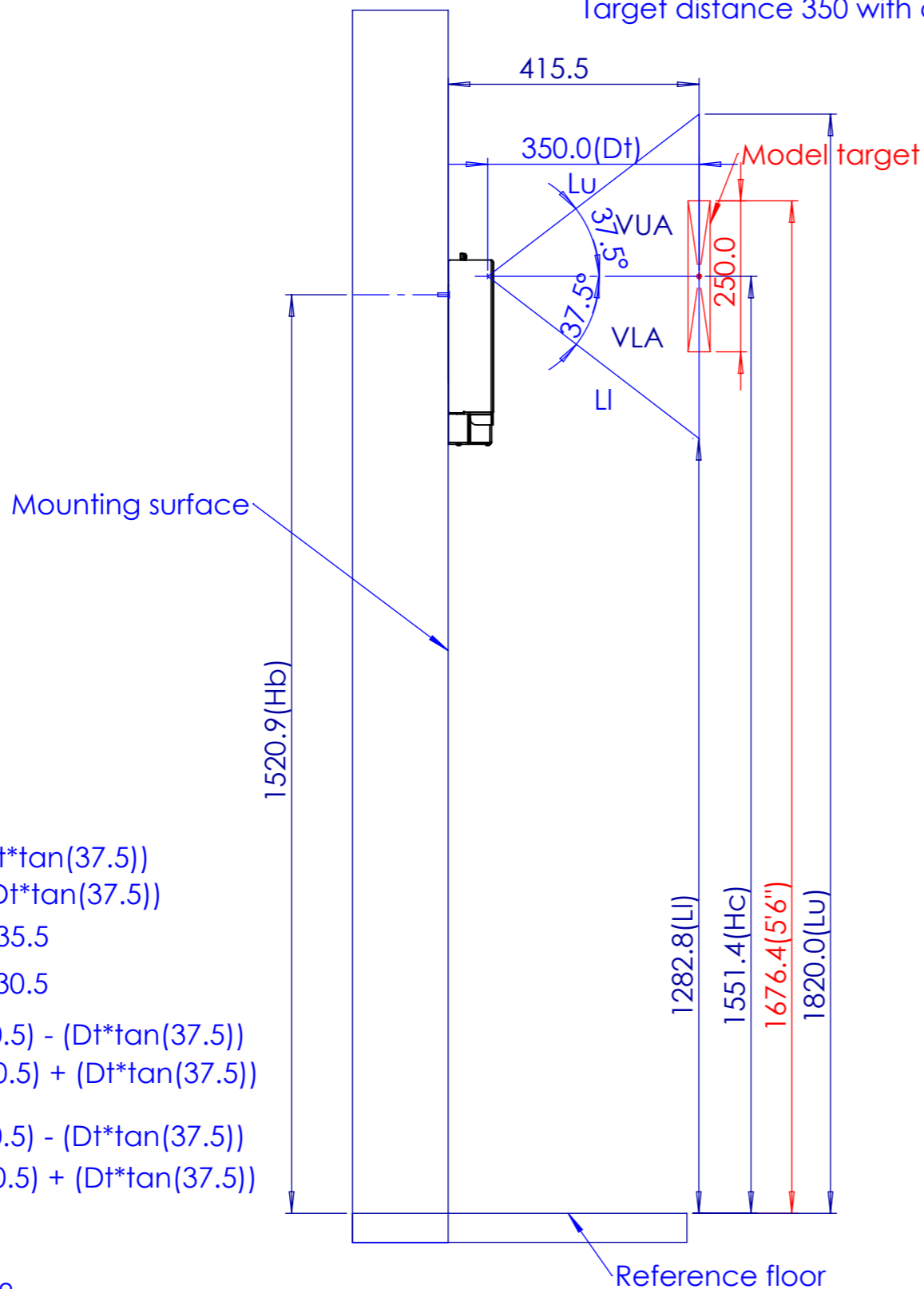
**Perception Sensors & Instrumentation LTD.**

Description:		BT420
MATERIAL:	DWG NO.	REVISION:
WEIGHT: 5206.9	SCALE: 1:5	1

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Example Installation  
 Unit secured to surface using mounting holes B  
 Target distance 350 with camera height at 1551.4mm



$$\begin{aligned}
 Li &= Hc - (Dt \cdot \tan(37.5)) \\
 Ui &= Hc + (Dt \cdot \tan(37.5)) \\
 Hc &= Ha + 35.5 \\
 Hc &= Hb + 30.5 \\
 Li &= (Hb + 30.5) - (Dt \cdot \tan(37.5)) \\
 Ui &= (Hb + 30.5) + (Dt \cdot \tan(37.5)) \\
 Li &= (Ha + 30.5) - (Dt \cdot \tan(37.5)) \\
 Ui &= (Ha + 30.5) + (Dt \cdot \tan(37.5))
 \end{aligned}$$

$$\begin{aligned}
 Hb &= 1520.9 \\
 Hc &= 1520.9 + 30.5 = 1551.4 \\
 Dt &= 350
 \end{aligned}$$

$$\begin{aligned}
 Li &= (1551.4) - (350 \cdot \tan(37.5)) = 1282.8 \\
 Lu &= (1551.4) + (350 \cdot \tan(37.5)) = 1820
 \end{aligned}$$

Example measurements for a system mounted with the camera system centered on 1551.4mm (mid point of a 1676.4 (5'6") target). target heights calculated based on a model face height of 250mm, field results may vary.

Dt(mm)	Height Range(mm)	Max target height	Min target height
300	460	1781.4(5'10")	1571.4(5'2")
350	537	1820(6')	1532.8(5'1")
400	613	1857.9(6'1")	1494.9(4'11")
450	690	1896.4(6'3")	1456.5(4'10")
500	769	1935.9(6'4")	1416.9(4'8")
550	844	1973.4(6'6")	1379.4(4'7")
600	920	2011.4(6'7")	1341.4(4'5")
650	998	2050.4(6'9")	1302.4(4'4")

Distances given are approximate, and heights are calculated as without footwear. Appropriate adjustments should be made to account for footwear/ppe on an installation specific basis

Max target height = Lu  
 Min Target height = Li + 250  
 Min target heights should not be rounded down

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 ANGULAR: 0.5

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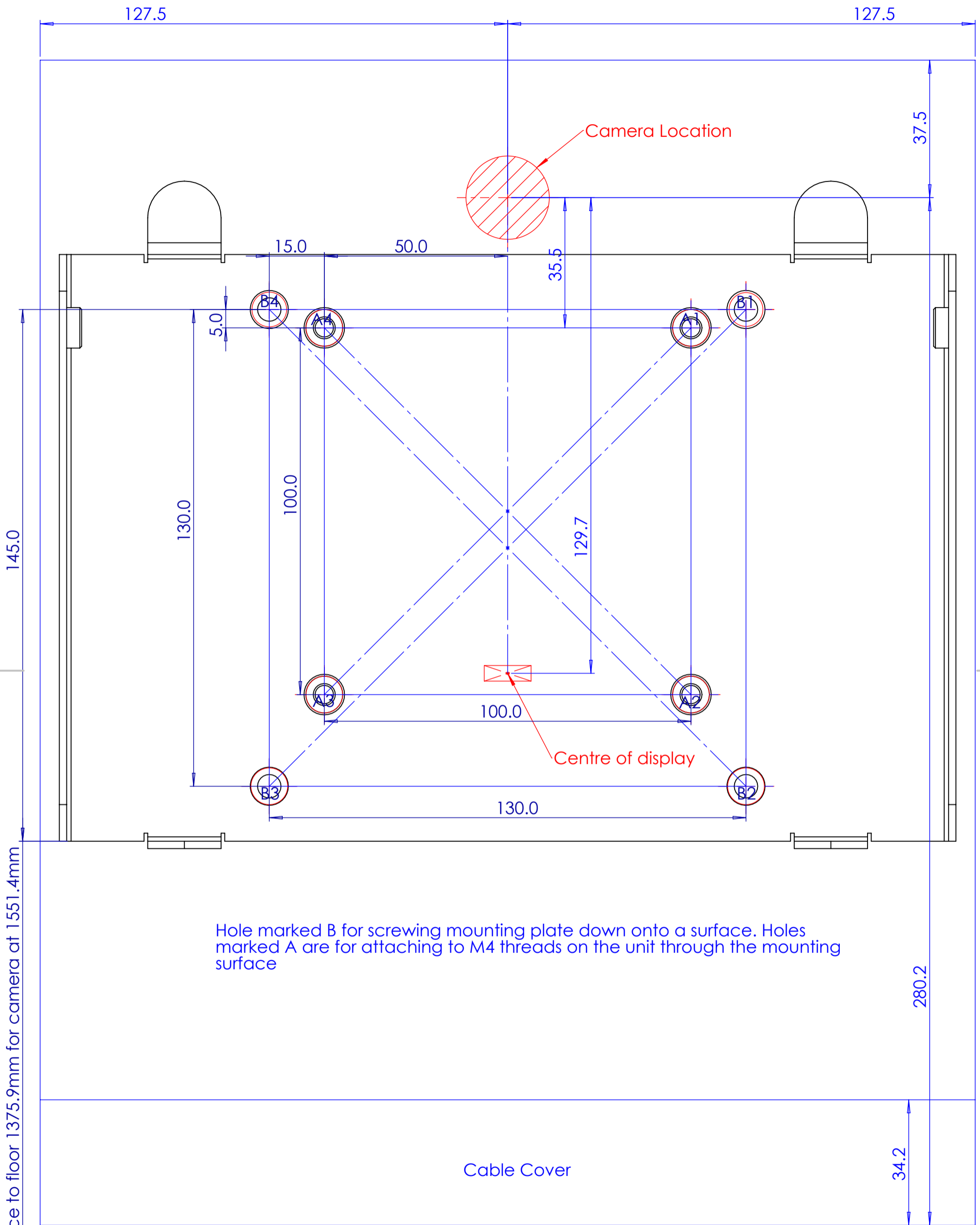
FINISH: DEBURR AND BREAK SHARP EDGES		
NAME	SIGNATURE	DATE
DRAWN: A Hyde		12/09/2023
CHK'D: J Hyde		12/09/2023

**Perception Sensors & Instrumentation LTD.**

Description: BT420

MATERIAL:	DWG NO.	REVISION:
WEIGHT: 5206.9	SCALE: 1:10	1
DO NOT SCALE DRAWING		SHEET 3 OF 4
PSI_BT420_01		A3

Mounting Template



Hole marked B for screwing mounting plate down onto a surface. Holes marked A are for attaching to M4 threads on the unit through the mounting surface

FINISH: DEBURR AND BREAK SHARP EDGES

Perception Sensors & Instrumentation LTD.

Description:

NAME	SIGNATURE	DATE
DRAWN A Hyde		12/09/2023
CHK'D J Hyde		12/09/2023

MATERIAL:

DWG NO.

UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN MILLIMETERS and degrees  
TOLERANCES:  
LINEAR: 0.1  
ANGULAR: 0.5

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WEIGHT: 5206.9

SCALE:1:1

DO NOT SCALE DRAWING

SHEET 4 OF 4

REVISION: 1

PSI\_BT420\_01

Custom