



Manufacturing Document

Quotation Package

LSMKv1000

CANTROL CORPORATION

Request for Quotation

Product	Type	Custom Membrane Keypad/Switch
	Specifications	<i>See Specifications Page</i>
Quantities To Quote	Initial Order	100
		250
		500
		1000
	Additional Orders	100
		250
		500
		1000

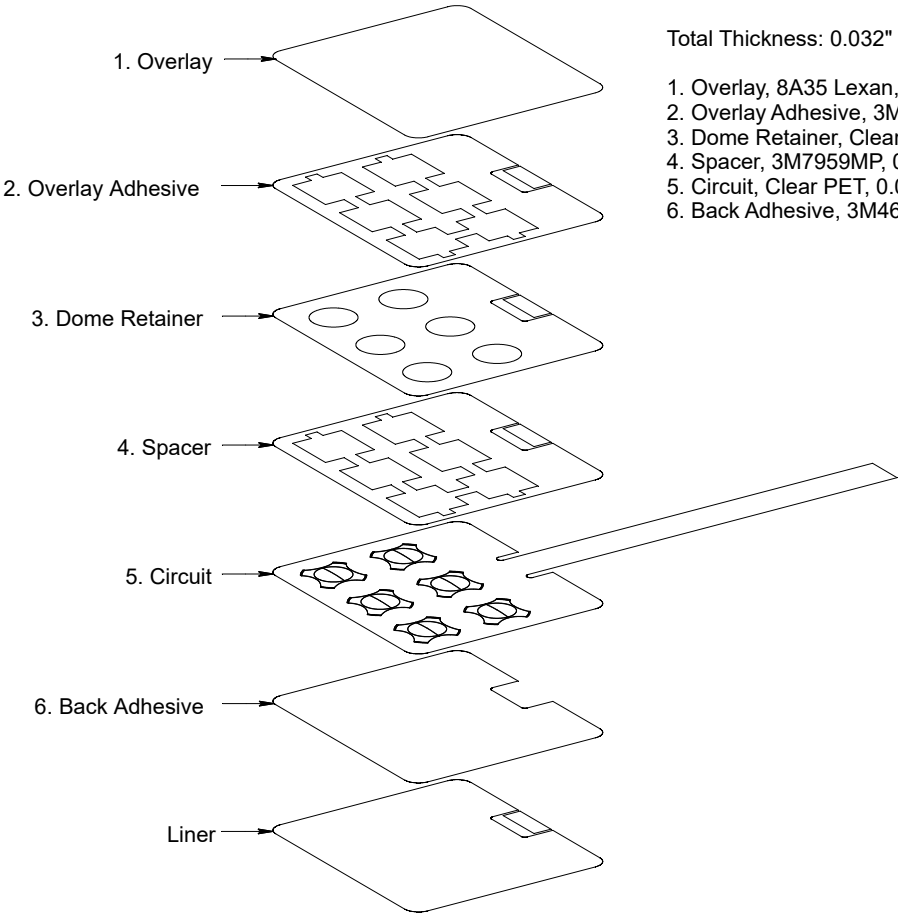
Company Information

Bill To	Company Name	Cantrol Corporation	Ship To	Company Name	Cantrol Corporation
	Address	5711 Lacey Blvd SE Suite 301		Address	5711 Lacey Blvd SE Suite 301
	City, State	Lacey, WA		City, State	Lacey, WA
	Country, ZIP	USA, 98503		Country, ZIP	USA, 98503
	Phone	360-943-2952		Phone	360-943-2952
	Fax	360-352-4112		Fax	360-352-4112
Contact	Purchasing	David Johnstone	cantrolcorp@gmail.com		
	Technical	David Johnstone			

Specifications

Project	LSMKv1000	
Description	Logicsense Membrane Keypad	
Version	1.00.0	
Keypad	Size	1.89" X 1.677", +0.0"/-0.005"
	Thickness	0.032" \pm 0.002" (Total)
	Switch Count	6
	Operating Temperature	-20°F to 140°F
	Operating Humidity	5%RH to 95%RH
	Environment	Indoor
	LEDs	None
	Embossing	None
	Windows	None
	Shielding	None
	Certifications	None
	Back Adhesive	For smooth ABS plastic surface
Layers	1. Overlay	8A35 Lexan, 0.007" [0.1778mm]
	2. Overlay Adhesive	3M467MP, 0.002" [0.0508mm]
	3. Dome Retainer	Clear PET, 0.007" [0.1778mm]
	4. Spacer Layer	3M7959MP, 0.009" [0.2286mm]
	5. Circuit	Clear PET, 0.005" [0.127mm]
	6. Back Adhesive	3M467MP, 0.002" [0.0508mm]
Overlay	Material	Polycarbonate
	Surface Finish	Velvet (Textured)
	Thickness	0.007" \pm 0.001"
Color	Overlay	Pantone Cool Gray 2
	Graphic	Pantone Neutral Black C
Circuit	Type	Flex
	Description	Shared common, Normally open
	Electrical Rating	100mA 28VDC
	Loop Resistance	< 100 Ω
	Conductor Material	Manufacturers Choice. Verification Required
Connector	Type	Zif
	Conductors	7
	Pitch	1mm
	Width	8mm
	Tail Length	3.0" \pm 0.1"
Switch	Type	Metal Dome (Tactile)
	Actuations	1 million+
	Contact Rating	<i>See Electrical Rating</i>
	Contact Bounce	<0.3ms make <0.6ms break
Metal Dome	Type	4 Leg, No dimple, No hole (I.E. Snaptron U12390)
	Material	Stainless Steel
	Diameter	12mm (0.472")
	Height	0.76mm (0.030")
	Trip Force	Preferred 280g (Min:250g, Max:400g)
Design Files	Quotation Package	LSMKv1000-Package.pdf
	Drawings (CAD)	LSMKv1000-Layers.gbr
	Artwork	LSMKv1000-Artwork.pdf
	3d Models	<i>Provided Upon Request</i>

Revisions				
AN	Rev	Description	Date	Chg'd By
1493933946	A	Release	--	--



Unless Otherwise Specified:

Dimensions in Inches [mm]	
Tolerances	
Fractional	1/200
Decimal .X	±0.1
.XX	±0.01
.XXX	±0.005
Angular	± 0°30'
Printed Graphic	±0.01

Drawn By
D. Johnstone

Date
05/04/2017

Do Not Scale Drawing

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5711 LACEY BLVD SE
SUITE 301
LACEY, WA 98503-2463

Control Corporation

LSMK-v1000

Layers
Stackup

Size
A

Drawing No.
AN-1493933946

Rev
A

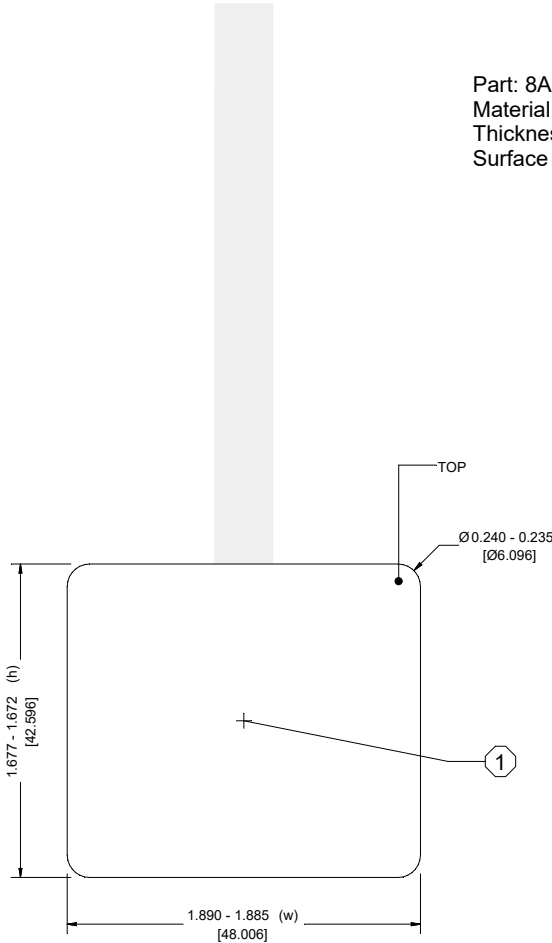
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CAD File
LSMK-CADv1003.vcp

Sheet
1 of --


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Part: 8A35 Lexan
 Material: Polycarbonate
 Thickness: 0.007" ± 0.001"
 Surface Finish: Velvet (Textured)



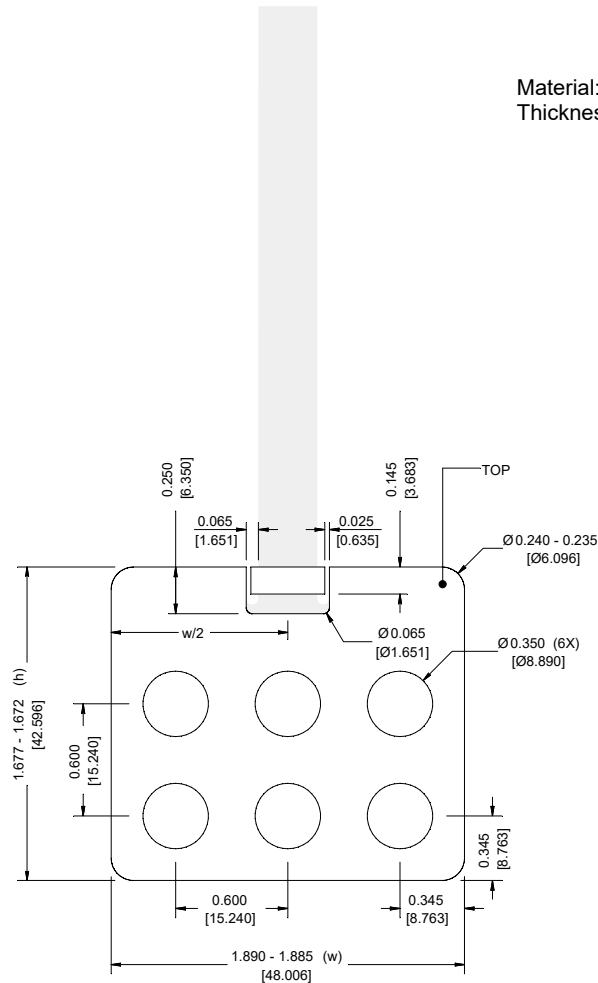
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Notes
 1. Overlay does not contain embossing. Overlay should contour to metal domes. See rendering for example.


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Drawn By D. Johnstone	 5711 LACEY BLVD SE SUITE 301 LACEY, WA 98503-2463	Size	Drawing No.	Rev	
Date 05/04/2017		A	AN-1493933946	A	
Do Not Scale Drawing		Scale	1:1	CAD File LSMK-CADv1003.vcp	Sheet 1 of --

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Material: Clear PET
Thickness: 0.007" [0.1778mm]

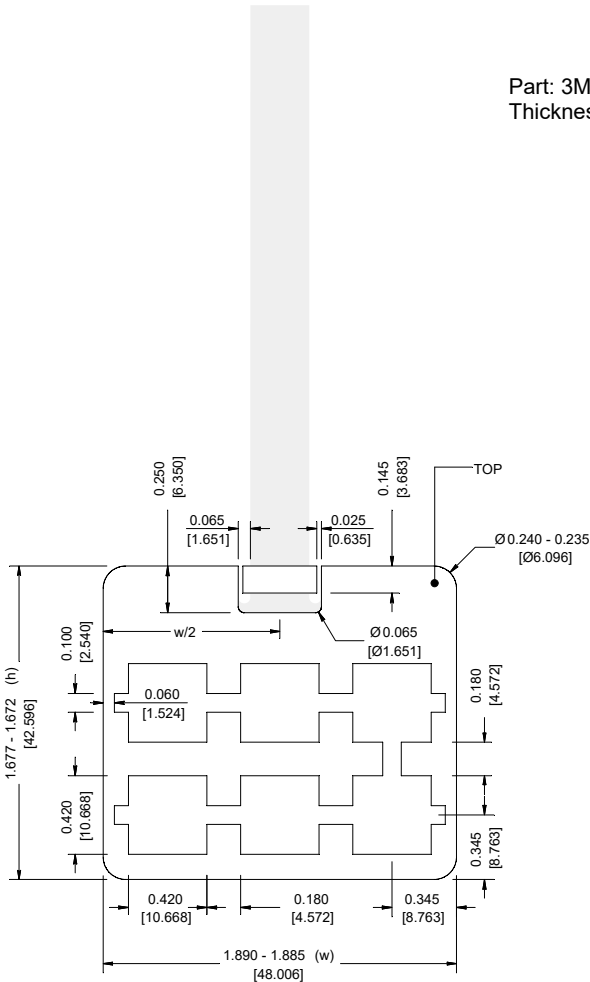


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Decimal .X	±0.1														
.XX	±0.01														
.XXX	±0.005														
Angular	± 0°30'														
Printed Graphic	±0.01														
				Layer 3											
				<i>Dome Retainer</i>											
<p>Drawn By D. Johnstone</p> <p>Date 05/04/2017</p> <p>Do Not Scale Drawing</p>		 <p>5711 LACEY BLVD SE SUITE 301 LACEY, WA 98503-2463</p>		<p>Size</p> <p>A</p>											
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				<p>Rev</p> <p>A</p>											
		<p>Scale</p> <p>1:1</p>		<p>CAD File</p> <p>LSMK-CADv1003.vcp</p>											
				<p>Sheet</p> <p>1 of --</p>											

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Part: 3M7959MP
 Thickness: 0.009" [0.2286mm]



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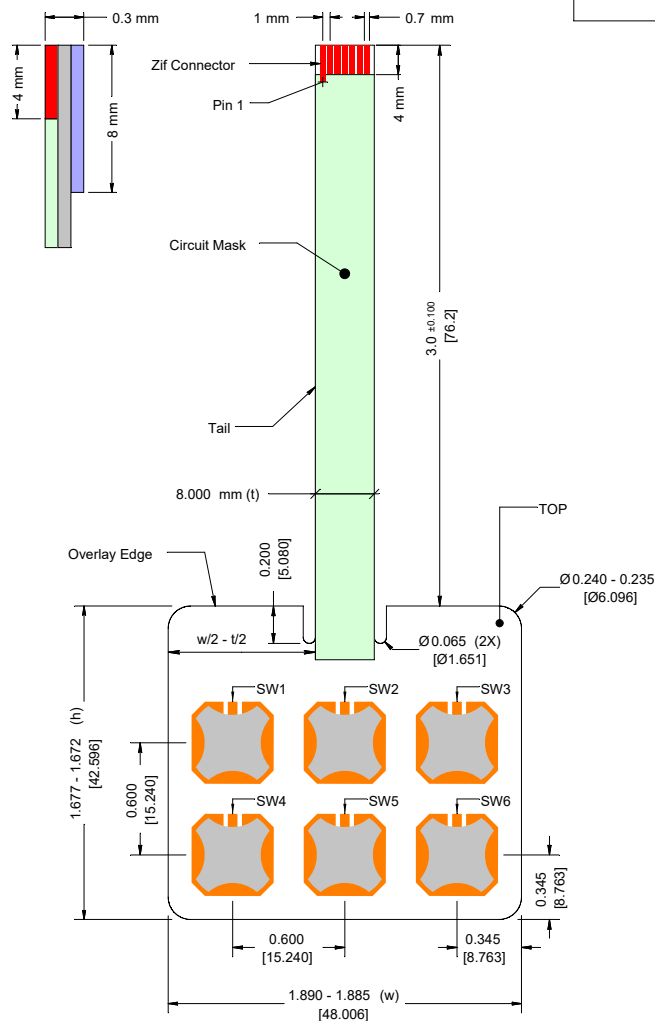
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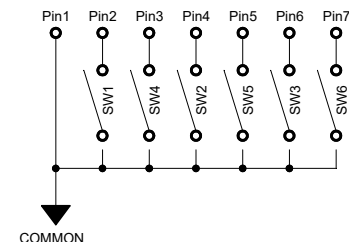
[Circuit]
 Type: Flex
 Description: Shared common, Normally open
 Electrical Rating: 100mA 28VDC
 Loop Resistance: < 100Ω
 Conductor Material: Manufacturers Choice.
 Verification Required

[Connector]
 Type: Zif
 Conductors: 7
 Pitch: 1mm
 Width: 8mm
 Tail Length: 3.0" ± 0.1"

[Switch]
 Type: Metal Dome (Tactile)
 Actuations: 1 million+
 Contact Rating: See Electrical Rating
 Contact Bounce: <0.3ms make <0.6ms break



Schematic



Production File: LSMKv1000-Layers.gbr

Notes

- Traces can be modified by manufacturer. Circuit must maintain same pinout. Verification required.
- Conductor material should be chosen by the manufacturer. Conductor must maintain provided specifications. Verification required.

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Dimensions in Inches [mm]	
Tolerances	
Fractional	1/200
Decimal .X	±0.1
.XX	±0.01
.XXX	±0.005
Angular	± 0°30'
Printed Graphic	±0.01

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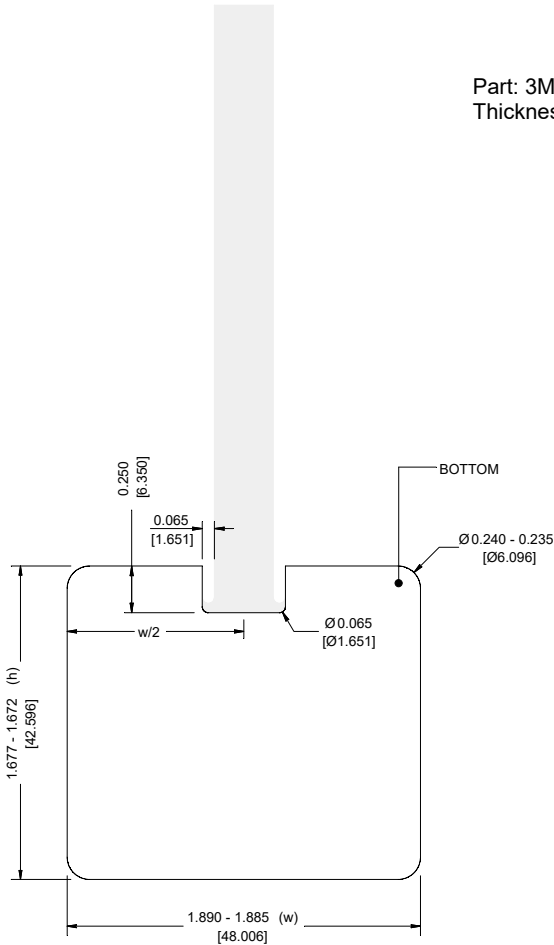
LSMK-v1000

Layer 5
 Circuit


Size	Drawing No.	Rev
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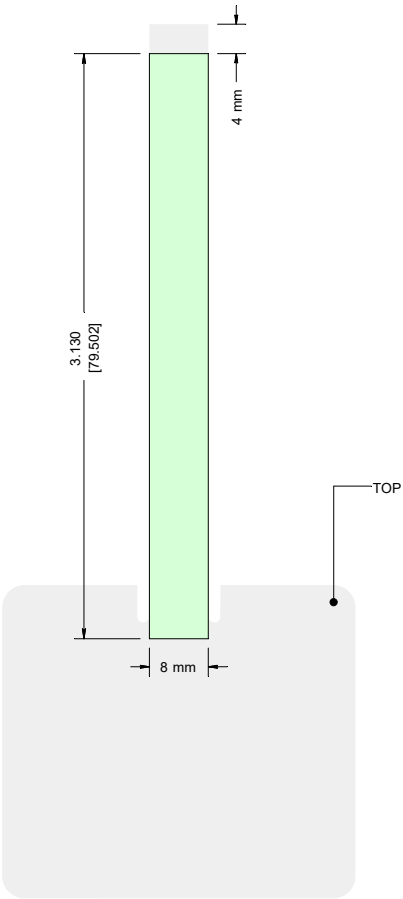
Part: 3M467MP
Thickness: 0.002" ± 0.0005"




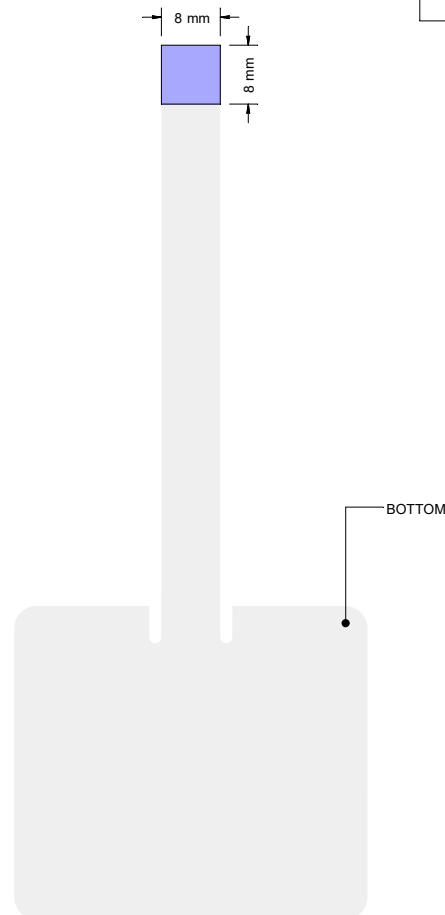
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	.XX ±0.01														
	.XXX ±0.005														
Angular	± 0°30'														
Printed Graphic	±0.01														
				Layer 6											
				Back Adhesive											
<p>Drawn By D. Johnstone</p> <p>Date 05/04/2017</p> <p>Do Not Scale Drawing</p>		 <p>5711 LACEY BLVD SE SUITE 301 LACEY, WA 98503-2463</p>		Size		Drawing No.		Rev							
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Printed Graphic	±0.01														
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Fractional	1/200
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Angular	± 0°30'
Printed Graphic	±0.01
Drawn By	D. Johnstone
Date	05/04/2017
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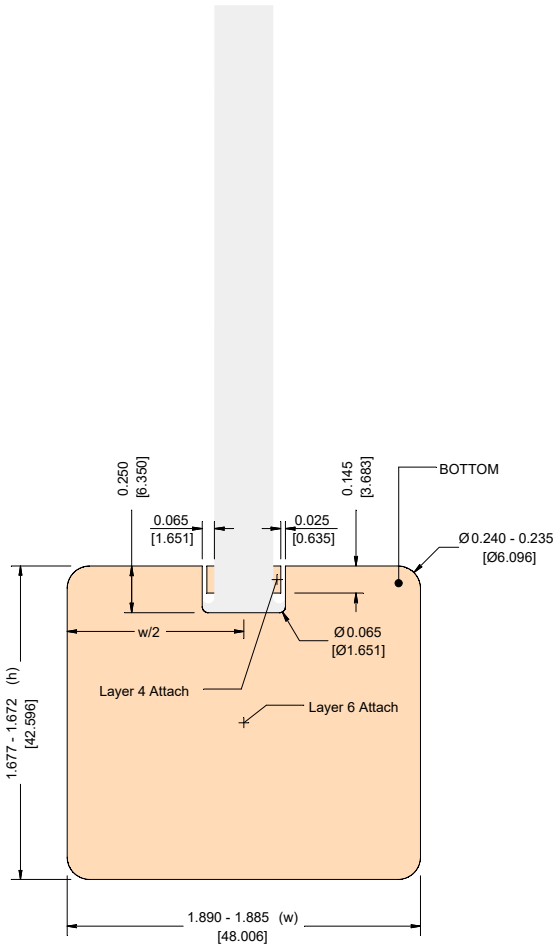
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LSMK-v1000		
Stiffener		
Dimensions		
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Sheet		1 of --

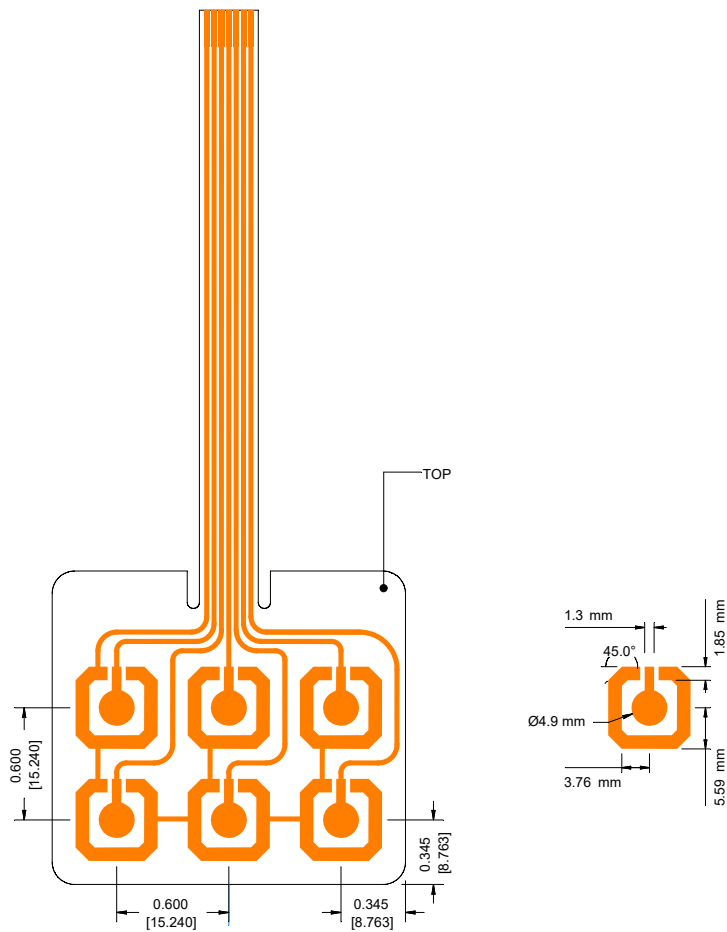
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Decimal	.X ±0.1														
	.XX ±0.01														
	.XXX ±0.005														
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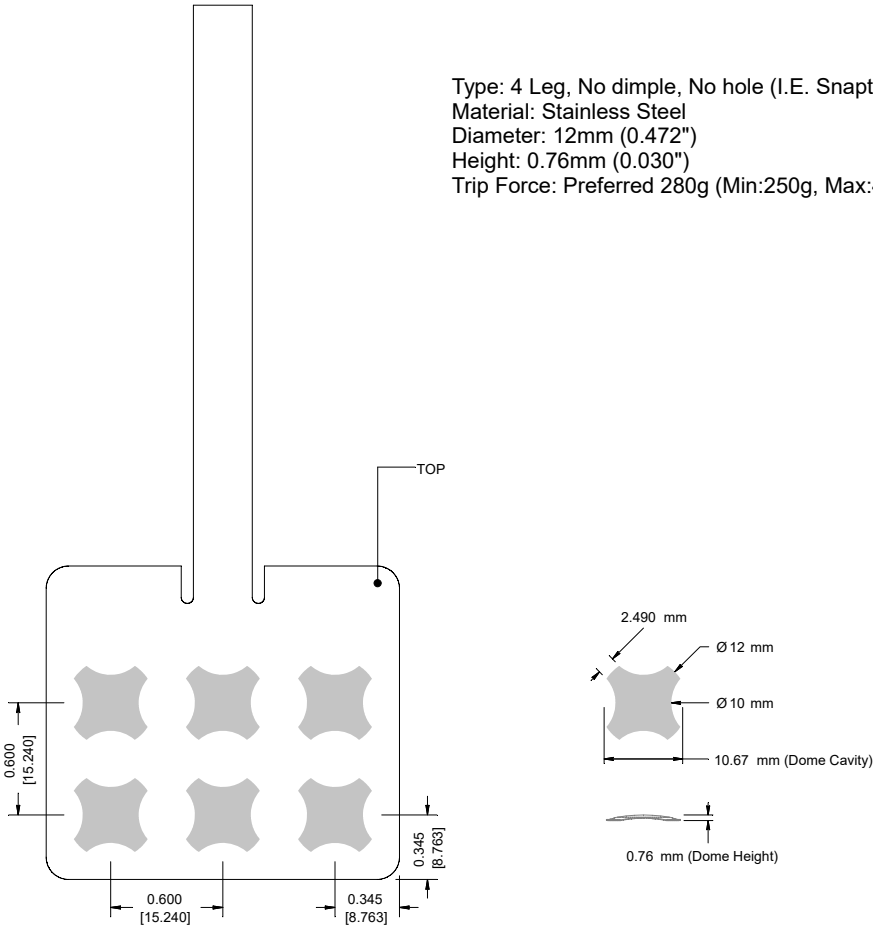



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				Traces Dimensions					
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Date 05/04/2017				A		AN-1493933946		A	
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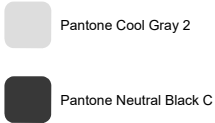
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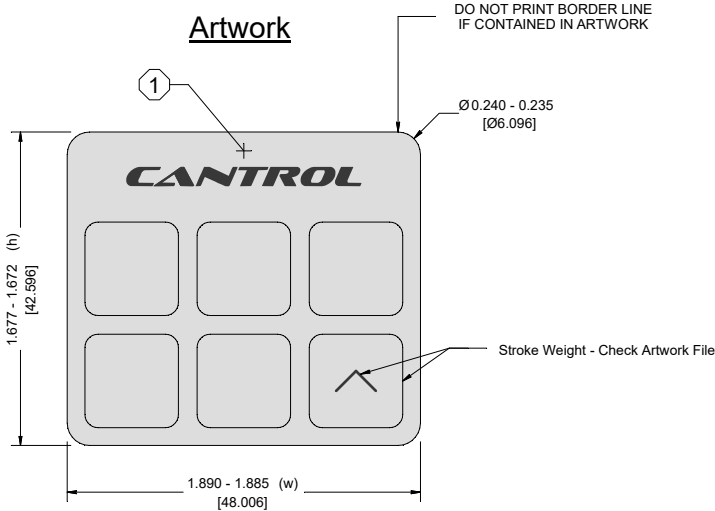
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Drawn By D. Johnstone	 5711 LACEY BLVD SE SUITE 301 LACEY, WA 98503-2463	Size A		Drawing No. AN-1493933946	Rev A
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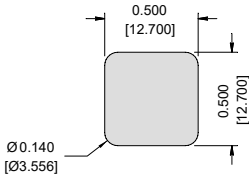
Color



Artwork




Button



Artwork File: LSMKv1000-Artwork.pdf

- Notes
- 1. DO NOT use included colors OR included graphic for production. Use specified artwork file for final design.
 - 2. Logo and/or logo size may change. Use specified artwork file for final design.

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<div>Drawn By</div> <div>D. Johnstone</div>		<div></div> <div>5711 LACEY BLVD SE</div> <div>SUITE 301</div> <div>LACEY, WA 98503-2463</div>		
<div>Date</div> <div>05/04/2017</div>				
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