Polytec

Uniblitz® XRS14

14mm Uni-Stable X-ray Shutter

Overview

The Uniblitz XRS14 has been designed specifically for x-ray switching applications. The innovative platinum-iridium (PtIr) blade design allows beam extinction of 90% up to 30 keV x-ray energy (based upon the tenth value extinction of PtIr). The XRS14 is well suited for applications such as x-ray crystallography, medical x-ray imaging, etc.

Uni-stable shutter devices, like the XRS14, require power to hold the blades in the open state.

Key Features

- 14mm aperture
- Uni-stable operation
- Capable of blocking x-ray energy (30 KeV)
- **RoHS Compliant**
- Transfer time on opening:

  20.0 milliseconds
- Total opening time:

  25.0 milliseconds
- Configured for the **VCM-D1 Shutter Driver**

Product Options

XRS14 ❷ ❸ ❹ ❺ ❻ - ❼ - ❽ Ex: XRS14S2P0-EC-21

❶ Shutter Series:
- **XRS14**

❷ Driver Compatibility:
- **S:** Use with VCM-D1 (Std.)
- **E:** Use with D880C or VED24

❸ Housing:
- **1:** Un-Housed
- **2:** #2 Housing

❹ Blade Coating:
- **P:** 0.01" thick PtIr (10% iridium, 90% platinum)

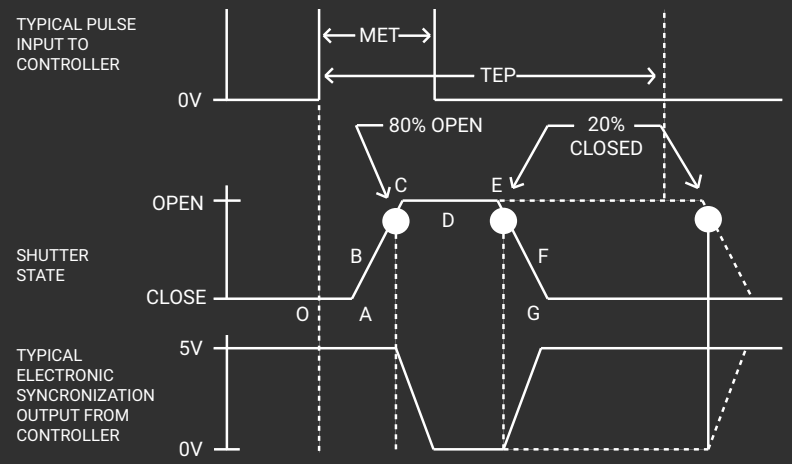
❺ Electronic Sync:
- **0:** Omitted
- **1:** Included

❻ Connector:
- **L:** 18" flying leads *(Un-housed only)*
- Leave blank for 7-pin Wire Pro connector

❼ Encapsulated Coil:
- **EC:** Included
- Leave blank if not required

❽ Mount: *(#2 housing only)*
- **21:** Zeiss Axiovert
- **24:** Olympus BX/IX
- **27:** Nikon
- **105:** C-Mount (Male)
- **106:** C-Mount (Female)
- Leave blank if not required

Shutter Timing



XRS14 (w/ VCM-D1 driver and PtIr blades)		Time (msec.)
O - A	Delay time on opening after current applied	5.0
A - C	Transfer time on opening	20.0
O - C	Total opening time	25.0
C - E	Min. dwell time with min. input pulse	20.0
B - F	Min. equivalent exp. time	5.0
E - G	Transfer time on closing	10.0
A - G	Total window time	35.0
MET	Min. exposure time	25.0
TEP	Typical exposure pulse	>25.0

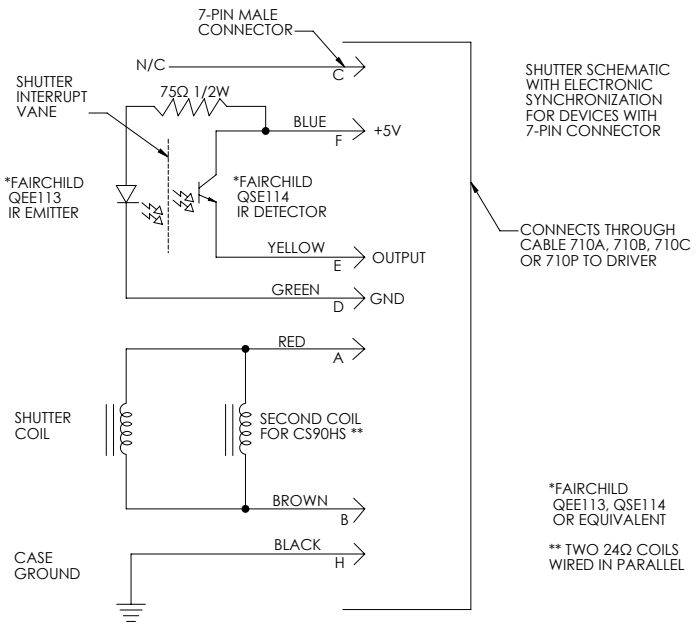
Technical Specifications

Coil Resistance	Voltage to Open	Hold Voltage (Nominal) [1]
12 Ω	+65 VDC	+5 VDC

[1] *Voltage level required across actuator coil when being held in the open position.*

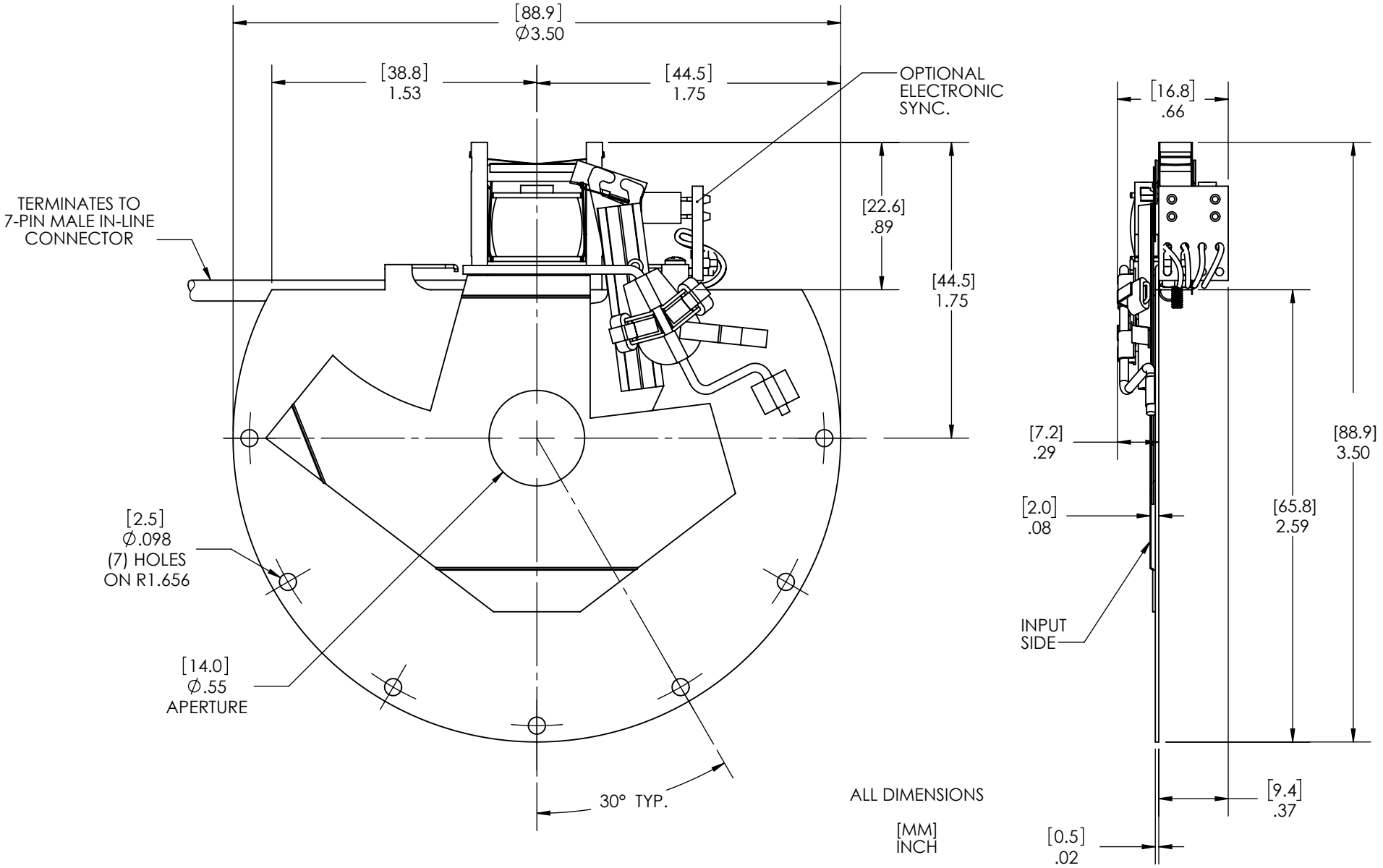
[2] *(Continuous/Burst) Continuous frequency rating specified at shutter's minimum exposure pulse. Burst frequency rating specified for four (4) seconds maximum with one (1) minute minimum between bursts.*

Series	Weight (Unhoused)	Weight (Housed)	Operating Temp.	Max. Opening Bounce	Max. Closing Bounce	Max. Freq. of Operation [2]	Number of Shutter Blades
XRS14	2.18 oz (0.06 kg)	10.35 oz (0.29 kg)	0 - 80 °C	15%	5%	2 Hz / 10 Hz	1

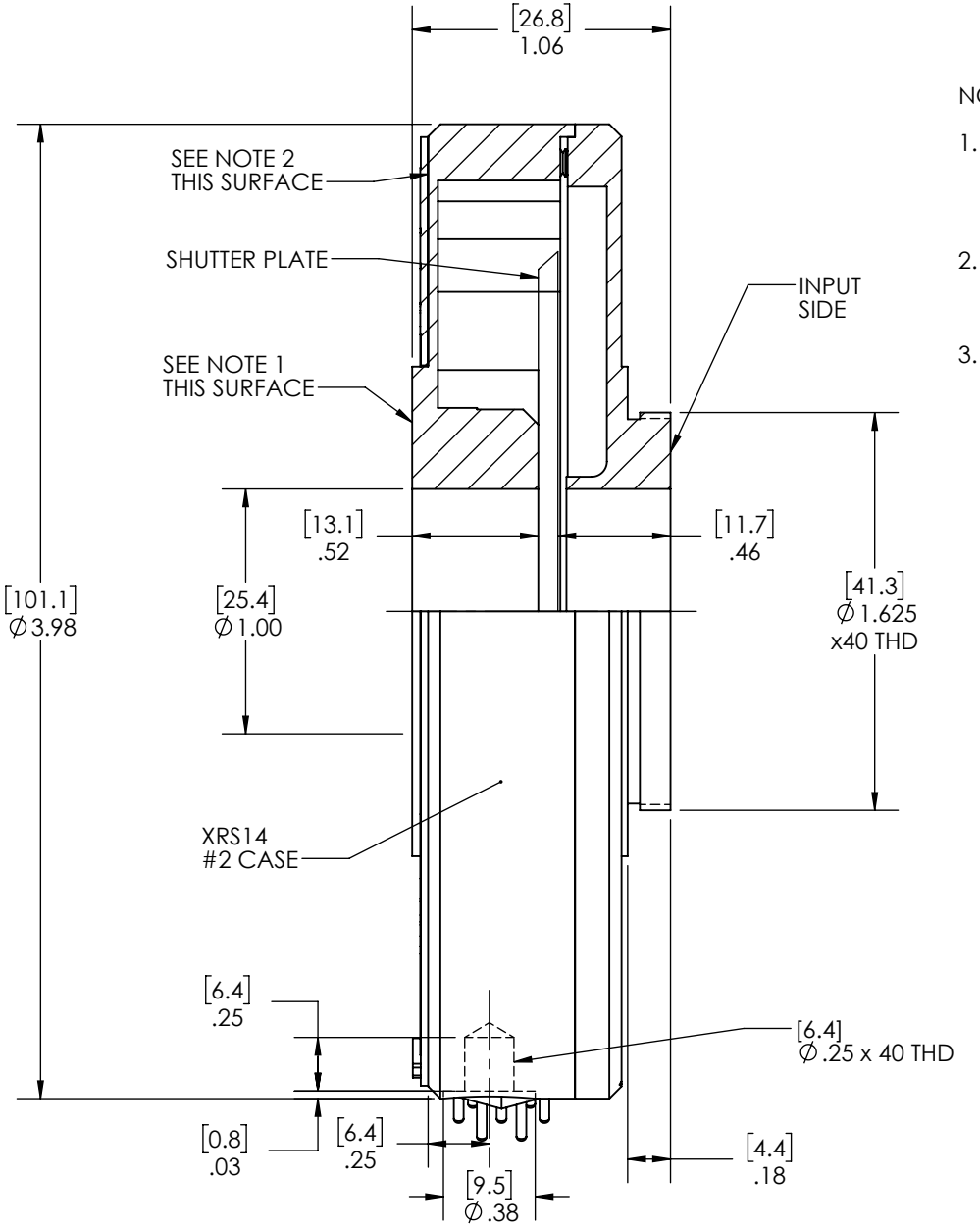


The electronic synchronization system provides a feedback signal (through the driver utilized) after the shutter transfers to the open state. The system incorporates an infrared emitting diode, an infrared sensitive detecting transistor, and an interrupting vane. The vane is attached to the shutter so as to block the light path between the emitter and detector in the closed position. When the shutter transfers to the 80% open position, the vane is removed from the infrared light path, allowing the emitter to switch the detector to the active state. For the XRS14, this system uses a similar activation flag attached to the mechanism, which triggers a reflective emitter/detector device. **No connection to the designated synchronization pins when no electronic sync. is selected.**

Technical Drawings - Un-housed XRS14



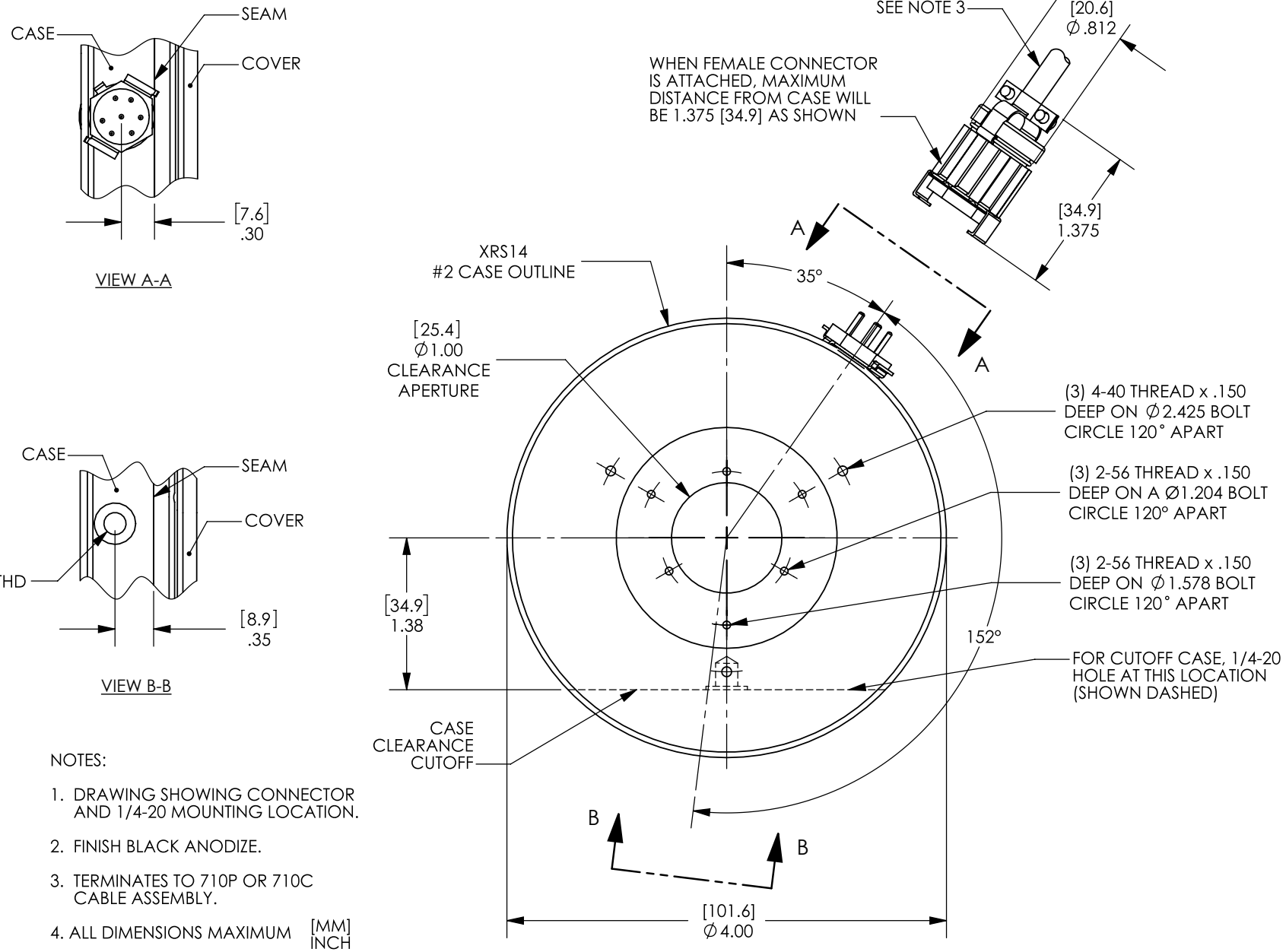
Technical Drawings - Housed XRS14



NOTES:

1. (3) #2-56 MOUNTING HOLES ON A Ø1.204 BOLT CIRCLE, 120° APART
   (3) #2-56 MOUNTING HOLES ON A Ø1.578 BOLT CIRCLE, 120° APART
2. (3) #4-40 MOUNTING HOLES ON A Ø2.425 BOLT CIRCLE, 120° APART (UNDER NAME PLATE)
3. ALL DIMENSIONS
   [MM]
   INCH

Technical Drawings - XRS14 Connector Layout



NOTES:

1. DRAWING SHOWING CONNECTOR AND 1/4-20 MOUNTING LOCATION.
2. FINISH BLACK ANODIZE.
3. TERMINATES TO 710P OR 710C CABLE ASSEMBLY.
4. ALL DIMENSIONS MAXIMUM [MM] INCH

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