

Request For Preliminary Quotation.

We would appreciate it if you could give us separate preliminary quotations on the following items:

- 5 prototype sensors of the Barrel Straight type
- 5 prototype sensors of the Barrel Stereo type
- 5 prototype sensors of the Disk Straight type
- 5 prototype sensors of the Disk Stereo type
- 618 sensors of the Barrel Straight type
- 618 sensors of the Barrel Stereo type
- 84 sensors of the Disk Straight type
- 84 sensors of the Disk Stereo type

The geometry of these 4 sensor types is defined in the attached drawings:

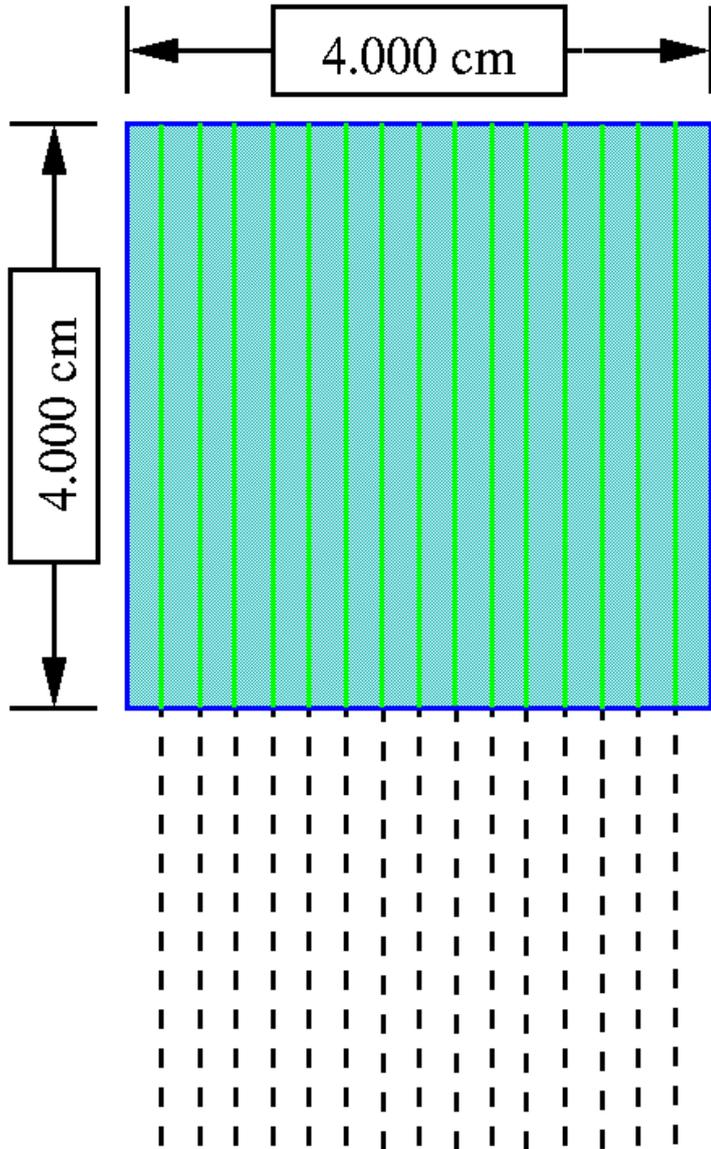
Barrel_Sensors_v1.gif
Disk_Straight_Sensor_v1.gif
Disk_Stereo_Sensor_v1.gif

All 4 sensors have 640 strips each.

(Note: Both dimensions and strip counts for the sensors are subject to changes when the designs are fine-tuned with respect to geometry and readout chips.)

Barrel Straight sensor

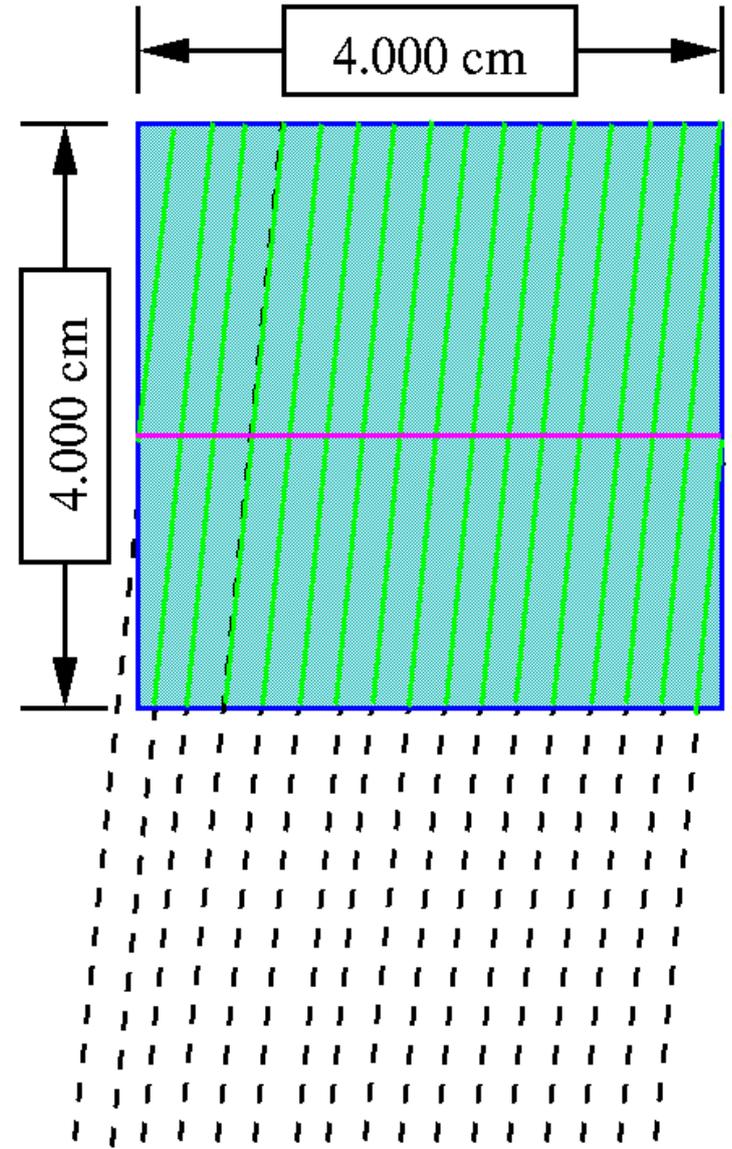
Only 7 (out of 640)
strips shown



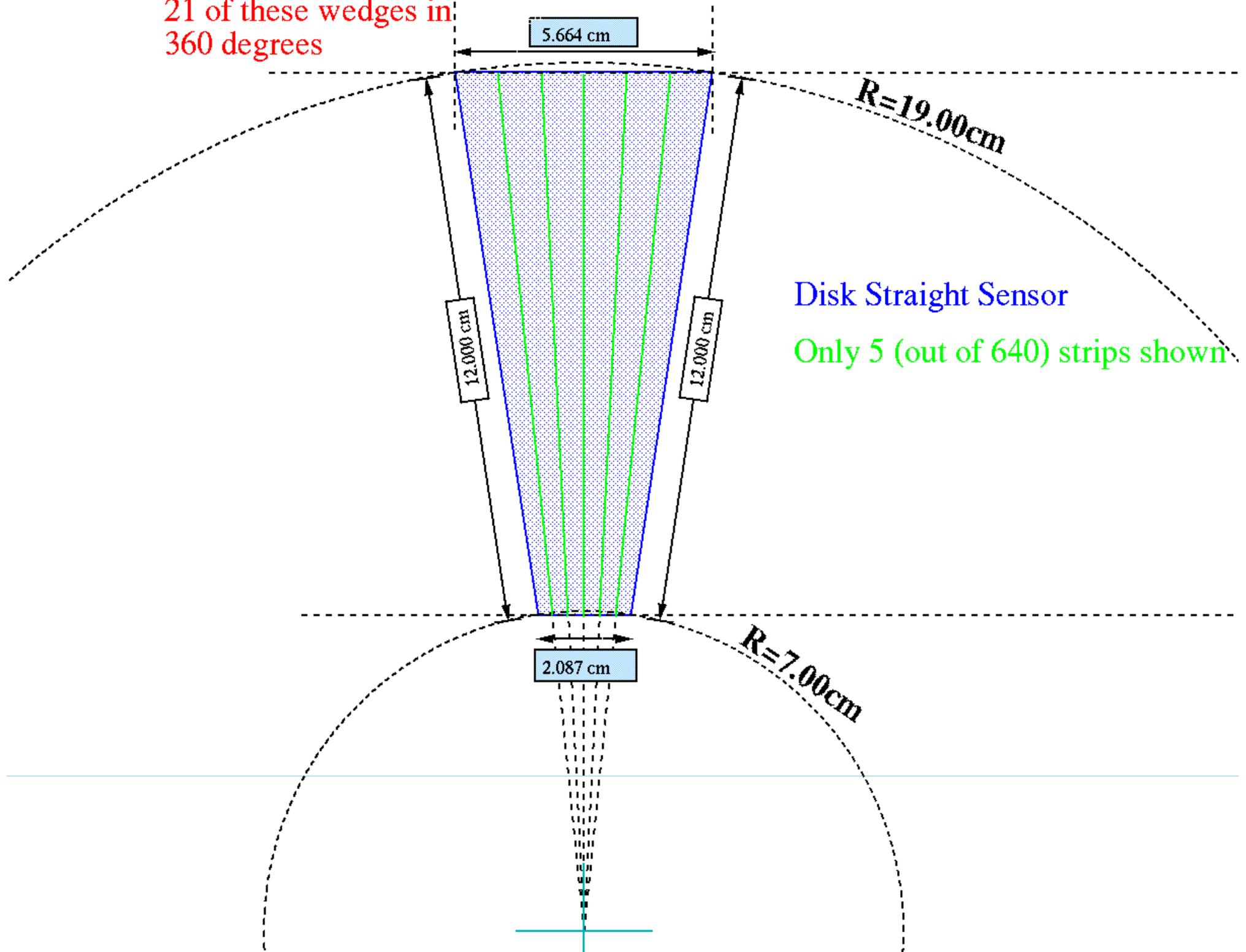
Barrel Stereo sensor

Strips angle of 100mrad

Second metal cross connection
to avoid dead areas



21 of these wedges in
360 degrees



5.664 cm

$R=19.00\text{cm}$

12.000 cm

12.000 cm

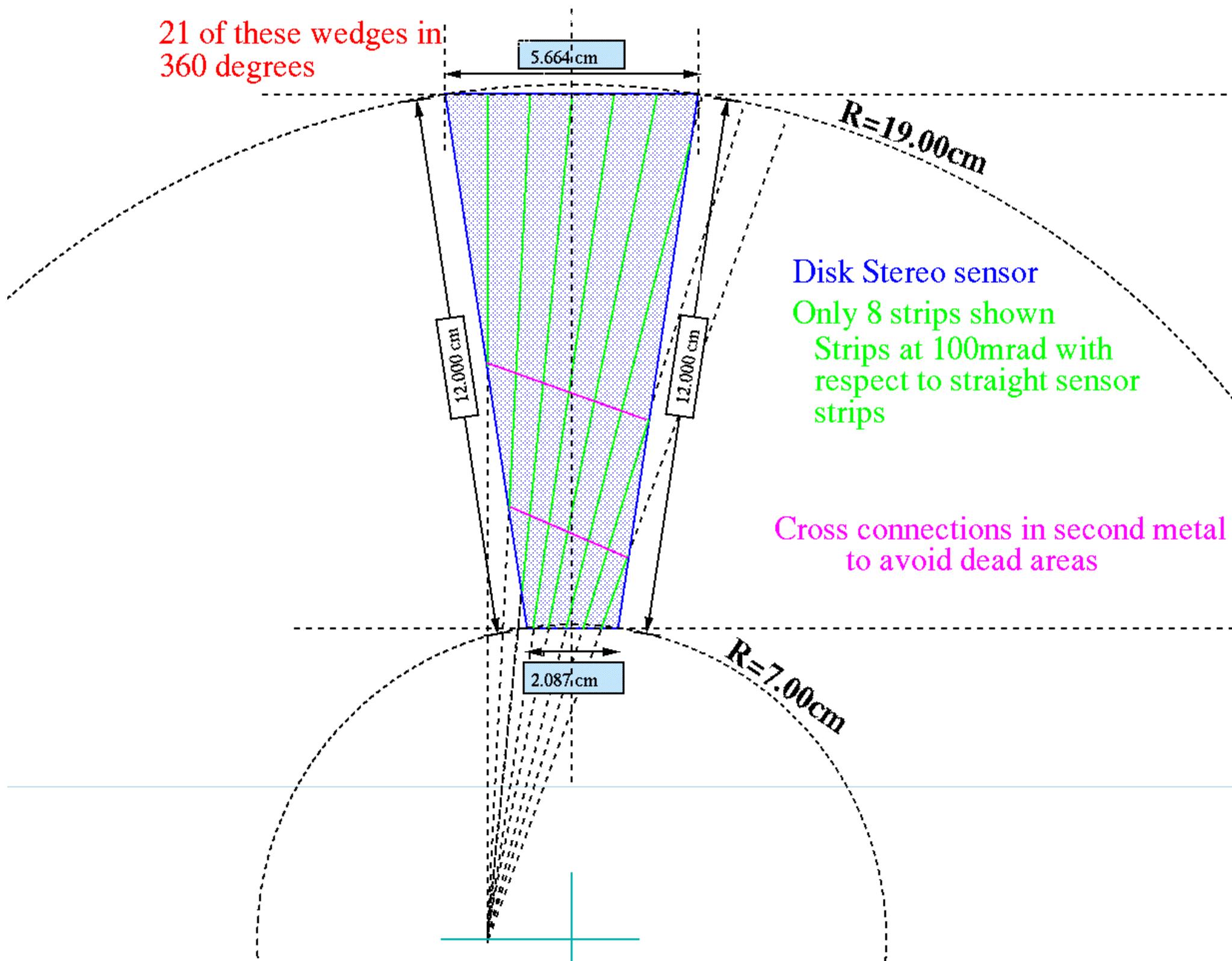
Disk Straight Sensor

Only 5 (out of 640) strips shown

2.087 cm

$R=7.00\text{cm}$

21 of these wedges in
360 degrees



Disk Stereo sensor

Only 8 strips shown

Strips at 100mrad with
respect to straight sensor
strips

Cross connections in second metal
to avoid dead areas

We would like to propose the following specifications for all sensor types:

- 1) high resistivity silicon ($\geq 4 \text{ k}\Omega\cdot\text{cm}$)
- 2) float zone
- 3) $\langle 111 \rangle$ or $\langle 100 \rangle$ crystal
- 4) thickness $325\mu\text{m} \pm 15\mu\text{m}$ (please see note A)
- 5) thickness uniformity $10\mu\text{m}$ max
- 6) detector flatness $\pm 30\mu\text{m}$
- 7) $2.0 \pm 0.5 \text{ M}\Omega$ polysilicon biasing resistors
- 8) coupling capacitance $> 100 \text{ pF}/\text{mm}^2$
- 9) all metal $\geq 1.5\mu\text{m}$
- 10) trace width second metal $\sim 10\mu\text{m}$ with resistance $< 0.03 \text{ }\Omega/\text{sq}$
- 11) second dielectric $\sim 4\mu\text{m SiO}_2$
- 12) leakage current at full depletion at 21 degrees Celsius $\sim 50\text{nA}/\text{cm}^2$
- 13) coupling capacitor $\geq 100 \text{ Volt}$ breakdown voltage
- 14) radiation hard
- 15) $\leq 1\%$ broken channels, randomly distributed

Note A: We would like to know if it is possible to obtain sensors which are thinner than 300um.

Note B: Please specify the expected breakdown voltage of the sensors.

Note C: Please specify delivery times after receiving the order.

Time schedules:

We expect to be ready this summer to order the prototypes for the barrel sensors.

In the summer of 2006 we will be ready to order the prototypes for the disk sensors.

The installation of the the barrel detector is expected to happen in the summer of 2008. This means that delivery of the sensors must start in the summer of 2007.

The disk are expected to be installed in the summer of 2009, which means that delivery of the sensors must start in the summer of 2008.

