

Nickel Estimates—Pixels only

Numbers for only **One Side** of Pixel detector.

Please query Andy Nichols or Tim Hayler re: SCT Ni locations

(Also someone from Lubyana regarding the cable Nickel)

Sizing of Nickel regions in cables

Aluminum cabling

Apparently, the aluminum used is 1% by mass Nickel (check with Lubyana)

Cable ends inside detector (connector prep)

Nickel: 1micron thick, 20mm wide by 35mm long

Cable ends at PPB1 (connector prep)

Nickel: 1micron thick, 20mm wide by 100mm long

Location of Nickel in Cables

Aluminum Cables to PPB1 from Detector

6.48kg Al, ~**64.8g** Nickel (1% by mass Nickel)

973pcs (along service route)

R110-R250 Z440-Z440

R250-R250 Z440-Z780

R250-R1100 Z780-Z780

Aluminum Cables Along Cryostat Wall

56kg Al ~**560g** Nickel (1% by mass Nickel)

R1100-R1100 Z780-Z3500 (route)

Inside Detector Cables (connector prep)

637pcs ~**450mm³** (**4.0g**) Nickel total in region

R110-R210 Z440-Z450 (barrel connectors volume)

336pcs ~**235mm³** (**2.1g**) Nickel total in region

R210-R240 Z490-Z780 (disk connectors volume)

PPB1 Cables (connector prep)

973 X 2pcs ~**3900mm³** (**34.7g**) Nickel total in region

Factor 2 accounts for ends of both cables entering and leaving PPB1

R1000-R1100 Z780-Z900 (PPB1 volume)

Sizing of Bellows:

Electroless Nickel Bellows

20mm long, 8mmOD (5mmID-25u wall)

With Corrugations, nickel volume each is 24mm³ (0.2g)

Strain-relief outside Pixel Radius

77pcs ~**1848mm³** (**16.1g**) Nickel total in region

R250-R300 Z780-Z790

PPB1 Region

77pcs ~**1848mm³** (**16.1g**) Nickel total in region

R1000-R1100 Z780-Z900 (PPB1 volume)

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