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Design and Construction of the High Threshold Čerenkov Counter Mirror Assembly for the CLAS12 detector at JLab[1] HARNEET GREWAL, JOHN PRICE, CSU Dominguez Hills, YOURI SHARABIAN, Thomas Jefferson National Accelerator Facility — An overview is presented of the design and construction of the High Threshold Čerenkov Counter (HTCC) mirror assembly to be placed in the forward region of the CLAS12 detector at the Thomas Jefferson National Accelerator Facility (JLab). The CO_2 gas HTCC has a pion momentum threshold of 4.9 GeV/c, and will provide improved pion-electron separation at the higher engeries that will be produced after the JLab 12 GeV upgrade is complete. The location of the HTCC in the forward detector requires that it be built with a minimal amount of material to limit the contamination of the momentum resolution due to multiple scattering events. This talk will demonstrate how this was achieved by using low mass composites. Also presented will be highlights of the innovative geometry of the design as well as the manufacturing process being implemented in order to maximize quality control.

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John Price
CSU Dominguez Hills

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