Monsoon 80mm
Crate Air Flow
Crate Parts

HEAT EXCHANGERS connect in series with ¼” copper tube

MONSOON CARDS (10) plug in on this side (6U x 160mm Eurocards)

HEAT EXCHANGER on CHILLER PLENUM (one at each end of main MONSOON cards)

92mm FAN (x2) on FAN PLENUM (one at each end of transition cards)

60mm FAN (x2) on MAIN PLENUM (at both ends, only this end shown here)

FAN power supply is in the middle (at both ends)

TRANSITION CARDS (8) (6U x 80mm)
Crate (without shield)

VICOR power supply with built-in 80mm fan, 30cfm listed, pressure drop unknown (x2)

POWER SUPPLY PLENUM

MAIN PLENUM
Air Flow Diagram

PWR SUPPLY PLENUM

FAN 60 mm  FAN 60 mm  FAN PS

VICOR PS 80 mm built in

30 CFM

MONSOON TRANSITION CARDS

60 CFM

FAN 92 mm  FAN 92 mm

VICOR PS 80 mm built in

30 CFM

FAN PS  FAN 60 mm  FAN 60 mm

30 CFM

COLD PLENUM

FAN PLENUM

60 CFM

FAN 92 mm  FAN 92 mm

COLD WATER HEAT EXCH

120 CFM

MONSOON MAIN MODULES

120 CFM

COLD PLENUM

COLD PLENUM

COLD WATER HEAT EXCH

120 CFM

MAIN PLENUM 1

MAIN PLENUM 2
Heat Exchanger Air Side Pressure Drop

The design uses a Lytron M05-050 heat exchanger.

For the target of 120 CFM air flow, the pressure drop is about 0.36 inches of water.
Air Pressure Diagram

DARK ENERGY SURVEY

PWR SUPPLY PLENUM

VICOR PS

80 mm built in

COLD WATER HEAT EXCH

FAN PS

+0.38”

FAN

+0.38”

FAN

+0.40”

FAN

+0.40”

COLD PLENUM

MAIN PLENUM 1

FAN PLENUM

MONSOON TRANSITION CARDS

-0.04”

MONSOON MAIN MODULES

-0.04”

COLD WATER HEAT EXCH

-0.36”

PRESSURE DROP PRESUMED = 0

120 CFM

FAN

+0.38”

-0.02”

+0.02”

-0.02”

30 CFM

FAN PS

+0.38”

-0.38”

-0.02”

H2O

+0.38”

H2O

-0.38”

120 CFM

MAIN PLENUM 2

00” H2O
92 mm FAN Requirements

92mm FANS must do 0.40” H2O @ 30 CFM

FFB0924SHE should work

If necessary, FFB0924EHE works up to 0.48”
60 mm FAN Requirements

60 mm FANS must do 0.38” H2O @ 30 CFM

FFB0624SHE should work

If necessary, FFB0624EHE ok to 0.48”
## 92 & 60 mm DELTA fans available

### 92 mm fans

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Rated Voltage</th>
<th>Operating Voltage Range</th>
<th>Rated Current</th>
<th>Rated Input Power</th>
<th>Speed</th>
<th>Maximum Air Flow</th>
<th>Maximum Air Pressure</th>
<th>Noise</th>
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<tbody>
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<td>FFB0912HHE</td>
<td>-R00 / -F00</td>
<td>12</td>
<td>7.0 to 13.8</td>
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### 60 mm fans

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<th>Speed</th>
<th>Maximum Air Flow</th>
<th>Maximum Air Pressure</th>
<th>Noise</th>
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