CLEANROOM SPECIFICATIONS

<table>
<thead>
<tr>
<th>SQFT</th>
<th>Class</th>
<th>(d \geq 500) nm</th>
<th>(d \geq 5,000) nm</th>
<th>ISO 14644*</th>
</tr>
</thead>
<tbody>
<tr>
<td>12,300</td>
<td>100</td>
<td>100</td>
<td></td>
<td>ISO 5</td>
</tr>
<tr>
<td>8,900</td>
<td>1,000</td>
<td>1,000</td>
<td>7</td>
<td>ISO 6</td>
</tr>
<tr>
<td>9,400</td>
<td>10,000</td>
<td>10,000</td>
<td>70</td>
<td>ISO 7</td>
</tr>
<tr>
<td>19,300</td>
<td>RA</td>
<td>Not Classified</td>
<td></td>
<td>*Return air</td>
</tr>
</tbody>
</table>

High Hazard occupants: Non-rated (4 CF SF-1) & chemical-intensive

H5 Occupancy: (maximum storage and use of highly toxic, corrosive,
and pyrophoric materials)

TGMS: 191 points of detection (base build)

Temperature: 68° ± 2° F

Humidity: 44 ± 5% RH

Sound (5 suites): Acoustically quiet NC-25 (e.g. 54 db at 63 Hz and
21 db at 8 kHz)

EMI (5 suites): 30 nT p-p at 60 Hz

Vibration: Vibration control VC-C, D, F, and G (e.g. 780 nm s-1
or ~12 nm at 10 Hz)

*Equivalent: < 500 nm not defined in FED-STD-209E

METROLOGY SUITES SPECIFICATIONS (3)
(with control room)

Temperature: 70° ± 2°F with 0.36° F hr-1 and 0.09° F min-1

Humidity: 40 ± 5% RH

TGMS: Available

Sound: Acoustically quiet NC-25

EMI: 10 nT p-p at 60 Hz

Vibration: Excellent vibration control VC-E & G

METROLOGY ROOMS SPECIFICATIONS (8)

Temperature: 70° ± 2°F with 0.9° F hr-1

Humidity: 55 ± 5% RH

TGMS: Available

Sound: Acoustically quiet NC-25

EMI: 10 to 30 nT p-p at 60 Hz

Vibration: Extreme vibration control VC-G & E

PREP & ANALYTICAL ROOM SPECIFICATIONS (2)

Temperature: 70° ± 2.0° F

Humidity: 55 ± 5% RH

TGMS: Available

Sound: Acoustically quiet NC-25 (e.g. 60 db at 63 Hz and
32 dB at 8 kHz)

Vibration: Vibration control VC-E

X-RAY ROOM SPECIFICATIONS (1)

Temperature: 70° ± 2.0° F

Humidity: 55 ± 5% RH

TGMS: Available

Sound: Acoustically quiet NC-50 (e.g. 71 db at 63 Hz
and 47 db at 8 kHz)

Vibration: Excellent vibration control VC-E

CLEANROOM HOOD / WET BENCH CAPABILITIES

x11 - Wet Process Benches
x17 - Corrosive Fume Hoods
x16 - Solvent Fume Hoods
x12 - General Fume Hoods
EXHAUST CAPABILITIES (W/ HEAT RECOVERY)

Corrosive: 105,000 CFM with -0.5" static @ POC
"Scrubber": 1500 CFM with -3.0" static @ POC
Solvent: 30,000 CFM with -0.5" static @ POC
General: 90,000 CFM with -0.5" static @ POC

GENERAL

Freight Elevator: 12' x 12' x 10' with a load capacity of 14,000 lbs. serving all five levels
CDA: ISO 8573-1 class 1-1-1 (low particle — see chart, ≤-70°C dew point, oil free)

Emergency Generator: 1,500 kW capacity with automatic switch gear located above grade to improve resiliency.
UHP Nitrogen: Grade 5.5+ delivered remotely from electronics grade 11,000 gal LN2 tanks and 3 nm filtration skid.
UHP Oxygen: Bulk Grade 3.5 with 20 nm filtration skid.
Gas Cabinets: 23, 3-cylinder fully automatic cabinets for storage and delivery of corrosive / toxic / pyrophoric / flammable gasses to both levels of cleanroom. H2/H3/H4 high hazard "bunker" storage for increased maximum allowable quantity (MAQ).
VMBs: 62, 8-stick semi-automatic VMBs for the distribution of corrosive / toxic / pyrophoric / flammable gasses to both levels of cleanroom.
Process Gas Piping: ~15,000ft of 316L, 10Ra max. electropolished process piping from gas cabinets to VMB piping. Monitored double containment as required.
AWN: High-performance turbulent-flow system with ~100 gpm throughput, automatic pH metering, and 2,800 gal full capacity with ability to lock-out effluent and re-treat if not compliant.
Lab Waste System: Fire-resistant polypropylene (FRPP) piping throughout building.

WATER SPECIFICATIONS

Reverse Osmosis Deionized Water: ASTM Type E1.2 microelectronics grade water (18.2 megohm-cm, very low particle)
Process Cooling Water (58°F): Fully flow bag filtration to 100 microns, polished to control resistivity, distributed in all non-ferrous piping (SS/PVC).

MAX PARTICLES m⁻³

<table>
<thead>
<tr>
<th>100 nm &lt; d &lt; 500nm</th>
<th>500 nm &lt; d &lt; 1,000 nm</th>
<th>1,000 nm &lt; d &lt; 5,000 nm</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤20,000</td>
<td>≤400</td>
<td>≤10</td>
</tr>
</tbody>
</table>

Acronym Definitions:

AWN: acid waste neutralization • CDA: compressed dry air • EMI: electro-magnetic interference • HPM: hazardous process materials • POC: point of connect • TGMS: toxic gas monitoring system • UHP: ultra high purity (compressed gas) • VMB: valve manual box