

LIGO E-Document Number: **E1000479-v1**

Sample Test:

Material under test:		MasterBond EP30-2 glass slides	
units		90	cm ²
absorption	-0.7 ±	0.2	ppm/yr
scatter	-2.6 ±	1.1	ppm/yr
max. normalized absorption		0.00E+00	ppm/yr/cm ²
max. normalized scatter		7.78E-03	ppm/yr/cm ²
test turbopump speed (liter/s)		8	torr/liter/sec

1 sigma
1 sigma
3 sigma
3 sigma
small ion pump

Scaled to LIGO:

LIGO Vacuum Volume	Vertex	LHO Diagonal	End	Comments
Quantity (units)	12.8	19.2	3.6	see E1000386-v1 for an estimate of amounts
LIGO ion pumping speed (liter/s)	6800	6800	1700	see E0900398 or PSI V049-1-078 for pump rates
pumping speed ratio (test/LIGO)	0.0012	0.0012	0.0047	does not include cryo-pump and effective pumping from the Beam Tube
max. absorption (ppm/yr)	0.000	0.000	0.000	* Limit is < 0.02 ppm/yr for a single source
max. scatter (ppm/yr)	0.000	0.000	0.000	* Limit is < 0.2 ppm/yr for a single source

* The overall limit on contamination loss on optics for AdL is < 0.5 ppm/yr absorption and < 4 ppm/yr scatter from all sources, per Table 4 of the COC Design Requirements Document (T000127-v1). It is assumed that ~20 significant sources could contribute.

