

Optical Lever Coordinates, H2
12/14/2010

E1000607-v2 aLIGO Optical Lever Coordinates, H2 .xls

GROUND
HEIGHT
GLOBAL -1854.2

IFO	Mirror	CHAMBER	BEAM POSITION, mm									Comment	PATH LENGTH	TRANSMIT HEIGHT	RECEIVE HEIGHT				
			ZEMAX			GLOBAL			LOCAL										
			X	Y	Z	X	Y	Z	X	Y	Z								
H2	OPTLEV																		
	BS	BSC4	0.0	7967.0	10450.0	10450.0	7967.0	0.0	1230.0	-1253.0	0.0	Source	550:00:00	F	BS	OPTLEV		1854.2	
			0.0	8175.2	10246.1	10246.1	8175.2	0.0	1026.1	-1044.8	0.0	BS	OPTLEV	IN/OUT	BSC4	VP5	291.4		
			0.0	8342.0	10082.8	10082.8	8342.0	0.0	862.8	-878.0	0.0	BS	optlev	periscope	M1		233.4		
			0.0	8235.9	9978.9	9978.9	8235.9	0.0	758.9	-984.1	0.0	BS	optlev	periscope	M2		148.5		
			0.0	9094.8	9137.8	9137.8	9094.8	0.0	-82.2	-125.2	0.0	BS					1202.1		
			0.1	8235.9	10008.1	10008.1	8235.9	-0.1	788.1	-984.1	-0.1	BS	optlev	periscope	M2		1222.7		
			0.1	8342.0	10115.5	10115.5	8342.0	-0.1	895.5	-878.0	-0.1	BS	optlev	periscope	M1		151.0		
			0.1	8194.3	10265.2	10265.2	8194.3	-0.1	1045.2	-1025.7	-0.1	BS	OPTLEV	IN/OUT	BSC4	VP5	210.3		
			0.1	7987.1	10475.1	10475.1	7987.1	-0.1	1255.1	-1232.9	-0.1	F	BS	OPTLEV	Rc		295.0	1854.1	
																3754.4			
	OPTLEV																		
	PR3	WAMCB3	1025.5	9383.2	15138.3	15138.3	9383.2	-1025.5	5918.3	163.2	-1025.5	Source	400:00:00	OPTLEV	PR3	IN		828.7	
			1007.8	9381.9	15392.3	15392.3	9381.9	-1007.8	6172.3	161.9	-1007.8	OPTLEV	PR3	IN	WAMCB3	VP6	254.6		
			89.8	9313.0	28556.5	28556.5	9313.0	-89.8	19336.5	93.0	-89.8	PR3 RADIUS					13196.3		
			-793.9	9473.6	15392.3	15392.3	9473.6	793.9	6172.3	253.6	793.9	OPTLEV	PR3	OUT	WAMCB3	VP12	13194.8		
			-811.0	9476.7	15138.3	15138.3	9476.7	811.0	5918.3	256.7	811.0	OPTLEV	PR3	OUT			254.6	2665.2	
																26900.3			
	OPTLEV																		
	HAM8	WAMCB3	913.9	8687.1	15138.3	15138.3	8687.1	-913.9	5918.3	-532.9	-913.9	Source	401:00:00	OPTLEV	HAM8	IN		940.3	
			900.7	8689.6	15392.3	15392.3	8689.6	-900.7	6172.3	-530.4	-900.7	OPTLEV	HAM8	IN/OUT	WAMCB3	VP5	254.4		
			224.9	8819.2	28420.2	28420.2	8819.2	-224.9	19200.2	-400.8	-224.9	DLC	HAM8	OPTLEV			13046.1		
			900.7	8812.4	15392.3	15392.3	8812.4	-900.7	6172.3	-407.6	-900.7	OPTLEV	HAM8	IN/OUT	WAMCB3	VP5	13045.4		
			913.8	8812.3	15138.3	15138.3	8812.3	-913.8	5918.3	-407.7	-913.8	OPTLEV	HAM8	OUT	(VP5)		254.3	940.4	
																26600.2			
	OPTLEV																		
	HAM9	WAMCA3	913.9	9626.9	27177.1	27177.1	9626.9	-913.9	17957.1	406.9	-913.9	Source	431:00:00	OPTLEV	HAM9	IN		940.3	
			900.6	9625.8	26923.1	26923.1	9625.8	-900.6	17703.1	405.8	-900.6	OPTLEV	HAM9	IN/OUT	WAMCA3	VP5	254.4		
			219.3	9569.1	13920.5	13920.5	9569.1	-219.3	4700.5	349.1	-219.3	DLC	HAM9	OPTLEV			13020.6		
			900.6	9739.2	26923.1	26923.1	9739.2	-900.6	17703.1	519.2	-900.6	OPTLEV	HAM9	IN/OUT	WAMCA3	VP5	13021.5		
			913.9	9742.6	27177.1	27177.1	9742.6	-913.9	17957.1	522.6	-913.9	OPTLEV	HAM9	OUT	(VP5)		254.4	940.3	
																26550.8			
	OPTLEV																		
	SR3	WAMCB4	1012.0	15138.3	8992.6	8992.6	15138.3	-1012.0	-227.4	5918.3	-1012.0	Source	463:00:00	OPTLEV	SR3	IN		842.2	
			995.3	15392.3	9000.3	9000.3	15392.3	-995.3	-219.7	6172.3	-995.3	OPTLEV	SR3	IN	WAMCB4	VP7	254.7		
			86.2	29261.2	9416.6	9416.6	29261.2	-86.2	196.6	20041.2	-86.2	SR3 RADIUS					13904.9		
			-802.7	15392.3	8999.6	8999.6	15392.3	802.7	-220.4	6172.3	802.7	OPTLEV	SR3	OUT	WAMCB4	VP11	13903.6		
			-819.0	15138.3	8992.0	8992.0	15138.3	819.0	-228.0	5918.3	819.0	OPTLEV	SR3	OUT			254.6	2673.2	
																28317.9			
	OPTLEV																		
	HAM11	WAMCB4	879.1	15138.3	9707.5	9707.5	15138.3	-879.1	487.5	5918.3	-879.1	Source	464:00:00	OPTLEV	HAM11	IN		975.1	
			866.6	15392.3	9695.5	9695.5	15392.3	-866.6	475.5	6172.3	-866.6	OPTLEV	HAM11	IN/OUT	WAMCB4	VP5	254.6		
			219.6	28469.7	9074.4	9074.4	28469.7	-219.6	-145.6	19249.7	-219.6	DLC	HAM11	OPTLEV			13108.1		
			866.8	15392.3	9791.5	9791.5	15392.3	-866.8	571.5	6172.3	-866.8	OPTLEV	HAM11	IN/OUT	WAMCB4	VP5	13113.0		
			879.4	15138.3	9805.5	9805.5	15138.3	-879.4	585.5	5918.3	-879.4	OPTLEV	HAM11	OUT			254.7	974.8	
																26730.4			
	OPTLEV																		
	HAM10	WAMCA4	913.9	27177.1	8687.1	8687.1	27177.1	-913.9	-532.9	17957.1	-913.9	Source	494:00:00	OPTLEV	HAM10	IN		940.3	
			900.6	26923.1	8702.2	8702.2	26923.1	-900.6	-517.8	17703.1	-900.6	OPTLEV	HAM10	IN/OUT	WAMCA4	VP5	254.8		
			218.1	13920.3	9474.4	9474.4	13920.3	-218.1	254.4	4700.3	-218.1	DLC	HAM10	OPTLEV			13043.5		
			900.3	26923.1	8802.3	8802.3	26923.1	-900.3	-417.7	17703.1	-900.3	OPTLEV	HAM10	IN/OUT	WAMCA4	VP5	13038.0		
			913.6	27177.1	8789.2	8789.2	27177.1	-913.6	-430.8	17957.1	-913.6	OPTLEV	HAM10	OUT			254.7	940.6	
																26591.0			
	OPTLEV																		
	ITMX FOLD	BSC7	685.0	-155.0	37815.0	37815.0	-155.0	-685.0	37815.0	-9524.0	-685.0	Source	539:00:00	F	ITMX	OPTLEV	Tx	IN	1169.2

BEAM POSITION, mm																		PATH LENGTH	TRANSMIT HEIGHT	RECEIVE HEIGHT		
IFO	Mirror	CHAMBER	ZEMAX			GLOBAL			LOCAL			Comment										
			X	Y	Z	X	Y	Z	X	Y	Z											
			679.5	-151.8	37782.5	37782.5	-151.8	-679.5	37782.5	-9520.8	-679.5	F	ITMX	OPTLEV	IN	A1-A	VP4		33.1			
			80.1	199.5	9920.7	9920.7	199.5	-80.1	9920.7	-9169.5	-80.1	FOLD_ITMX-RADIUS							27870.5			
			-519.4	550.7	37782.5	37782.5	550.7	519.4	37782.5	-8818.3	519.4	F	ITMX	OPTLEV	OUT	A1-A	VP1		27870.5			
			-524.9	553.9	37800.0	37800.0	553.9	524.9	37800.0	-8815.1	524.9	F	ITMX	OPTLEV	Rc				18.6		2379.1	
																			55792.6			
	OPTLEV																					
	FMX	BSC7	0.0	1239.0	10641.0	10641.0	1239.0	0.0	10641.0	-8130.0	0.0	Source	555:00:00	OPTLEV	FMX		Tx			1854.2		
			0.0	1022.8	10417.1	10417.1	1022.8	0.0	10417.1	-8346.2	0.0	FM		OPTLEV	IN/OUT	BSC7	VP5		311.3			
			0.0	820.0	10207.1	10207.1	820.0	0.0	10207.1	-8549.0	0.0	FMX		optlev	periscope	M1			291.9			
			0.0	1032.1	9987.5	9987.5	1032.1	0.0	9987.5	-8336.9	0.0	FMX		optlev	periscope	M2			305.4			
			0.0	139.1	9062.8	9062.8	139.1	0.0	9062.8	-9229.9	0.0	FMX							1285.5			
			0.9	1032.1	9952.3	9952.3	1032.1	-0.9	9952.3	-8336.9	-0.9	FMX		optlev	periscope	M2			1260.5			
			1.2	820.0	10163.6	10163.6	820.0	-1.2	10163.6	-8549.0	-1.2	FMX		optlev	periscope	M1			299.4			
			1.4	1048.6	10391.3	10391.3	1048.6	-1.4	10391.3	-8320.4	-1.4	FM		OPTLEV	IN/OUT	BSC7	VP5		322.6			
			1.6	1277.6	10619.4	10619.4	1277.6	-1.6	10619.4	-8091.4	-1.6	FMX		OPTLEV	Rc				323.2		1852.6	
																			4399.8			
	OPTLEV																					
	ITMYFOLD	BSC8	685.0	38051.0	-155.0	-155.0	38051.0	-685.0	-9524.0	38051.0	-685.0	Source	565:00:00	F	ITMY	OPTLEV	Tx	CTR		1169.2		
			679.5	37797.0	-151.8	-151.8	37797.0	-679.5	-9520.8	37797.0	-679.5	F	ITMY	OPTLEV	IN	A1-B	VP3		254.1			
			80.1	9897.7	199.7	199.7	9897.7	-80.1	-9169.3	9897.7	-80.1	FOLD_ITMY-RADIUS							27907.9			
			-519.4	37797.0	551.3	551.3	37797.0	519.4	-8817.7	37797.0	519.4	F	ITMY	OPTLEV	OUT	A1-B	VP6		27907.9			
			-524.9	38051.0	554.5	554.5	38051.0	524.9	-8814.5	38051.0	524.9	F	ITMY	OPTLEV	Rc				254.1		2379.1	
																			56324.1			
	OPTLEV																					
	FMY	BSC8	0.0	10608.0	1263.0	1263.0	10608.0	0.0	-8106.0	10608.0	0.0	Source	582:00:00	OPTLEV	FMY		Tx			1854.2		
			0.0	10392.8	1047.1	1047.1	10392.8	0.0	-8321.9	10392.8	0.0	FM		OPTLEV	IN/OUT	BSC8	VP5		304.8			
			0.0	10166.5	820.0	820.0	10166.5	0.0	-8549.0	10166.5	0.0	FMY		optlev	periscope	M1			320.6			
			0.0	9955.1	1032.1	1032.1	9955.1	0.0	-8336.9	9955.1	0.0	FMY		optlev	periscope	M2			299.5		1854.2	
			0.0	9064.8	138.6	138.6	9064.8	0.0	-9230.4	9064.8	0.0	FMY							1261.4			
			1.0	9984.2	1032.1	1032.1	9984.2	-1.0	-8336.9	9984.2	-1.0	FMY		optlev	periscope	M2			1282.1			
			1.2	10202.5	820.0	820.0	10202.5	-1.2	-8549.0	10202.5	-1.2	FMY		optlev	periscope	M1			304.4			
			1.5	10414.2	1025.7	1025.7	10414.2	-1.5	-8343.3	10414.2	-1.5	FM		OPTLEV	IN/OUT	BSC8	VP5		295.2			
			1.7	10646.0	1251.0	1251.0	10646.0	-1.7	-8118.0	10646.0	-1.7	FMY		OPTLEV	Rc				323.3			
																			4391.2			
	OPTLEV																					
	ETMX	BSC5	755.0	-160.0	72626.7	72626.7	-160.0	-755.0	-3743.3	-160.0	-755.0	Source	796:00:00	F	ETMX	OPTLEV	Tx	CTR		1099.2		
			704.6	-133.5	72871.0	72871.0	-133.5	-704.6	-3499.0	-133.5	-704.6	F	ETMX	OPTLEV	IN	A-17A	VP5		250.9			
			76.4	200.3	75920.7	75920.7	200.3	-76.4	-449.3	200.3	-76.4	F							3131.5			
			-551.9	534.0	72871.0	72871.0	534.0	551.9	-3499.0	534.0	551.9	F	ETMX	OPTLEV	OUT	A-17A	VP9		3131.5			
			-602.2	560.8	72626.7	72626.7	560.8	602.2	-3743.3	560.8	602.2	F	ETMX	OPTLEV	Rc				250.9		2456.4	
																			6764.9		1854.2	
	PHOTCAL1																					
	ETMX	BSC5	0.0	-820.0	72626.7	72626.7	-820.0	0.0	-3743.3	-820.0	0.0	Source	800:00:00	PHOTCAL1	F	ETMX	Tx	IN				
			14.3	-744.3	72871.0	72871.0	-744.3	-14.3	-3499.0	-744.3	-14.3	PHOTCAL1-2	F	ETMX	IN	A-17A	VP3		256.2		1839.9	
			192.6	199.9	75920.7	75920.7	199.9	-192.6	-449.3	199.9	-192.6	F							3197.5			
			307.4	807.7	73959.7	73959.7	807.7	-307.4	-2410.3	807.7	-307.4	PERI1-1	PHOTCAL	F	ETMX				2056.3			
			306.7	691.9	73995.7	73995.7	691.9	-306.7	-2374.3	691.9	-306.7	PERI1-2	PHOTCAL	F	ETMX				121.3			
			21.2	738.9	72871.0	72871.0	738.9	-21.2	-3499.0	738.9	-21.2	PHOTCAL1-2	F	ETMX	OUT	A-17A	VP8		1161.3			
			-41.1	749.2	72626.7	72626.7	749.2	41.1	-3743.3	749.2	41.1	PHOTCAL1	F	ETMX	Rc				252.3		1895.3	
																			7044.8			
	PHOTCAL2																					
	ETMX	BSC5	0.0	-895.8	72626.7	72626.7	-895.8	0.0	-3743.3	-895.8	0.0	Source	801:00:00	PHOTCAL2	F	ETMX	Tx	IN		1854.2		
			-2.3	-814.4	72871.0	72871.0	-814.4	2.3	-3499.0	-814.4	2.3	PHOTCAL1-2	F	ETMX	IN	A-17A	VP3		257.5			
			-31.5	200.2	75920.7	75920.7	200.2	31.5	-449.3	200.2	31.5	F							3214.1			
			-50.2	853.4	73959.3	73959.3	853.4	50.2	-2410.7	853.4	50.2	PERI2-1	PHOTCAL	F	ETMX				2067.4			
			-51.7	695.7	73994.1	73994.1	695.7	51.7	-2375.9	695.7	51.7	PERI2-2	PHOTCAL	F	ETMX				161.5			
			-42.0	790.1	72871.0	72871.0	790.1	42.0	-3499.0	790.1	42.0	PHOTCAL1-2	F	ETMX	OUT	A-17A	VP8		1127.0			
			-39.9	810.7	72626.7	72626.7	810.7	39.9	-3743.3	810.7	39.9	PHOTCAL2	F	ETMX	Rc				245.2		1894.1	
																			7072.8			

