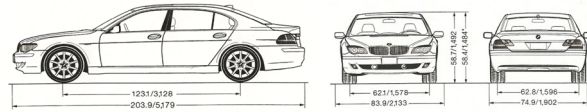




MARS MIDWEST ACCIDENT
RECONSTRUCTION SERVICES

car: 2008 BMW 750i
 curb weight W = 19802.5 Newtons
 wheelbase L = 3.12 meters
 a = 1.56 meters
 average track width t = 1.59 meters
 c.g. height h_c = 0.51 meters
 f/r weight distribution = 50/50
 l/r weight distribution = 50/50
 maneuver = braking and left-hand turn
 h_e/L = 0.320755
 h_e/L = 0.163462

static or nominal wheel loads at zero lateral & longitudinal acceleration
 highest dynamic wheel load (1.0g longitudinal & lateral acceleration)
 lowest dynamic wheel load (1.0g longitudinal & lateral acceleration)



left-front wheel

longitudinal deceleration magnitude, g-units

	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
0.0	4950.6	4970.7	4990.8	5010.9	5031.0	5051.2	5071.3	5091.4	5111.5	5131.6	5151.7
0.1	4911.2	4931.3	4951.4	4971.5	4991.6	5011.7	5031.8	5051.9	5072.0	5092.1	5112.2
0.2	4871.7	4891.8	4911.9	4932.0	4952.1	4972.2	4992.3	5012.4	5032.5	5052.6	5072.8
0.3	4832.3	4852.4	4872.5	4892.6	4912.7	4932.8	4952.9	4973.0	4993.1	5013.2	5033.3
lateral acceleration, g-units	0.4	4792.8	4812.9	4833.0	4853.1	4873.2	4893.3	4913.4	4933.5	4953.7	4973.8
	0.5	4753.4	4773.5	4793.6	4813.7	4833.8	4853.9	4874.0	4894.1	4914.2	4934.3
	0.6	4713.9	4734.0	4754.1	4774.2	4794.3	4814.4	4834.5	4854.7	4874.8	4894.9
	0.7	4674.5	4694.6	4714.7	4734.8	4754.9	4775.0	4795.1	4815.2	4835.3	4855.4
	0.8	4635.0	4655.1	4675.2	4695.3	4715.4	4735.5	4755.6	4775.7	4795.8	4816.0
	0.9	4595.6	4615.7	4635.8	4655.9	4676.0	4696.1	4716.2	4736.3	4756.4	4776.5
	1.0	4556.1	4576.2	4596.3	4616.4	4636.5	4656.6	4676.7	4696.8	4716.9	4737.1

right-front wheel

longitudinal deceleration, g-units

	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
0.0	4950.6	4970.7	4990.8	5010.9	5031.0	5051.2	5071.3	5091.4	5111.5	5131.6	5151.7
0.1	4990.1	5010.2	5030.3	5050.4	5070.5	5090.6	5110.7	5130.8	5150.9	5171.0	5191.1
0.2	5029.5	5049.6	5069.7	5089.8	5109.9	5130.1	5150.2	5170.3	5190.4	5210.5	5230.6
0.3	5069.0	5089.1	5109.2	5129.3	5149.4	5169.5	5189.6	5209.7	5229.8	5249.9	5270.0
lateral acceleration, g-units	0.4	5108.4	5128.5	5148.6	5168.7	5188.8	5209.0	5229.1	5249.2	5269.3	5289.4
	0.5	5147.9	5168.0	5188.1	5208.2	5228.3	5248.4	5268.5	5288.6	5308.7	5328.8
	0.6	5187.3	5207.4	5227.5	5247.7	5267.8	5287.9	5308.0	5328.1	5348.2	5368.3
	0.7	5226.8	5246.9	5267.0	5287.1	5307.2	5327.3	5347.4	5367.5	5387.6	5407.7
	0.8	5266.2	5286.3	5306.5	5326.6	5346.7	5366.8	5386.9	5407.0	5427.1	5447.2
	0.9	5305.7	5325.8	5345.9	5366.0	5386.1	5406.2	5426.3	5446.4	5466.5	5486.6
	1.0	5345.1	5365.2	5385.4	5405.5	5425.6	5445.7	5465.8	5485.9	5506.0	5526.1

left-rear wheel

longitudinal deceleration magnitude, g-units

	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
0.0	4950.6	4930.5	4910.4	4890.3	4870.2	4850.1	4830.0	4809.9	4789.8	4769.7	4749.6
0.1	4911.2	4891.1	4871.0	4850.9	4830.8	4810.6	4790.5	4770.4	4750.3	4730.2	4710.1
0.2	4871.7	4851.6	4831.5	4811.4	4791.3	4771.2	4751.1	4731.0	4710.9	4690.8	4670.7
0.3	4832.3	4812.2	4792.1	4772.0	4751.8	4731.7	4711.6	4691.5	4671.4	4651.3	4631.2
lateral acceleration, g-units	0.4	4792.8	4772.7	4752.6	4732.5	4712.4	4692.3	4672.2	4652.1	4632.0	4611.9
	0.5	4753.4	4733.3	4713.2	4693.1	4672.9	4652.8	4632.7	4612.6	4592.5	4572.4
	0.6	4713.9	4693.8	4673.7	4653.6	4633.5	4613.4	4593.3	4573.2	4553.1	4533.0
	0.7	4674.5	4654.4	4634.3	4614.1	4594.0	4573.9	4553.8	4533.7	4513.6	4493.5
	0.8	4635.0	4614.9	4594.8	4574.7	4554.6	4534.5	4514.4	4494.3	4474.2	4454.1
	0.9	4595.6	4575.5	4555.3	4535.2	4515.1	4495.0	4474.9	4454.8	4434.7	4414.6
	1.0	4556.1	4536.0	4515.9	4495.8	4475.7	4455.6	4435.5	4415.4	4395.3	4375.2

right-rear wheel

longitudinal deceleration magnitude, g-units

	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
0.0	4950.6	4930.5	4910.4	4890.3	4870.2	4850.1	4830.0	4809.9	4789.8	4769.7	4749.6
0.1	4990.1	4970.0	4949.9	4929.8	4909.7	4889.6	4869.4	4849.3	4829.2	4809.1	4789.0
0.2	5029.5	5009.4	4989.3	4969.2	4949.1	4929.0	4908.9	4888.8	4868.7	4848.6	4828.5
0.3	5069.0	5048.9	5028.8	5008.7	4988.6	4968.5	4948.3	4928.2	4908.1	4888.0	4867.9
lateral acceleration, g-units	0.4	5108.4	5088.3	5068.2	5048.1	5028.0	5007.9	4987.8	4967.7	4947.6	4927.5
	0.5	5147.9	5127.8	5107.7	5087.6	5067.5	5047.4	5027.3	5007.2	4987.1	4967.0
	0.6	5187.3	5167.2	5147.1	5127.0	5106.9	5086.8	5066.7	5046.6	5026.5	5006.4
	0.7	5226.8	5206.7	5186.6	5166.5	5146.4	5126.3	5106.2	5086.1	5066.0	5045.9
	0.8	5266.2	5246.1	5226.0	5205.9	5185.8	5165.7	5145.6	5125.5	5105.4	5085.3
	0.9	5305.7	5285.6	5265.5	5245.4	5225.3	5205.2	5185.1	5165.0	5144.9	5124.8
	1.0	5345.1	5325.0	5304.9	5284.8	5264.7	5244.6	5224.5	5204.4	5184.3	5164.2

Left-front Wheel Dynamic Load vs. ax & ay

