




Revision #:	3						
Eng. Spec #	Need	Importance	Specification (Description)	Unit of Measure	Marginal Value	Ideal Value	Comments/Status
1	1.1	10	1-Arm Compatability	Binary	Yes	Yes	Both left or right
2	1.3	10	Can be maneuvered through standard doorway (width)	inch	< 30"	< 28"	
3	1.3	10	Turning circle	Feet	3	0	
4	1.3	10	Straight line deviation in 25 ft.	Ratio	1	0.25	Ratio of corrections to power pulses
5	2.1	8	Acceptable force required to start wheelchair motion	Pounds -Force	15	15	
6	2.4	8	Pinch points during normal operation	Number of	3	0	
7	1.2	7	Foldable for transport/storage	Area	42"W x 38"D x 23" H	< 42"W x 38"D x 23" H	Wheelchair will be designed to fit into a small but common car: Ford Focus sedan. (Trunk dimensions: 42" wide x 38" deep x 23" tall)
8	2.7	7	Acceptable grip strength	kg	6	< 6	
9	2.2	7	Weight limit	Pounds	250	≥ 250	95th percentile male
10	1.5	7	User Control Interfaces	Number of	6	4	Ideal is selecting steering (2), forward motion (1), and brakes (1)
11	1.7	6	Able to traverse through common terrain (plush carpet, soil) by user	Binary	No	Yes	Must be able to function adequately in designated test area
12	1.4	5	Wheelchair can be maneuvered by attendant	Binary	Yes	Yes	Chair provides a method for the attendant to propel chair for patient
13	1.6	5	Able to remain stationary on a ramp with parking brake on	Binary	1:12	1:6	ADA standard for max. wheelchair ramp grade.
14	2.3	5	Range of motion of arm	Degrees	45-170	120	
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15	2.5	4	Comfort of seating and lever propulsion	Hours	3	8+	Importance decreased per customer; user will have their own gel pad or seat pad.
16	2.6	4	Wheelchair weight	Pounds	50	< 35	
17	1.5	4	Ease of assembly/disassembly for use	minutes	≤ 4	≤ 3	Time required to assemble/disassemble
18	3.2	4	Reproducible	US \$	~1000	≤ 1000	Around average price of existing wheelchairs
19	3.3	4	Anthropometric Adjustability	percentile	5th percentile male	95th percentile male	accommodates 5th percentile to 95th percentile male
20	4.1	3	Acceptable style	Binary	Yes	Yes	User determines if style is acceptable

Engr. Spec. #: enables cross-referencing (traceability) and allows mapping to lower level specs within separate documents
Source: Customer need #, regulatory standard (eg. EN 60601), and/or "implied" (must exist but doesn't have an associated customer need)
Description: quantitative, measurable, testable details
*This table can be expanded to document test results

Assumptions:
Wheelchair is for home use and surrounding environment. (Includes nursing home and long term care facilities)
250lbs weight limit. 95th percentile male
End user is stroke patient with sufficient use of one arm and one leg

Importance Ranking
 High
 Medium
 Low