

## House of Quality

Size		NO INPUT IN THIS AREA													++	Very Positive													
Weight															+	Positive									-	Negative		--	Very Negative
#REF!																													
Cost																													
Light Intensity																													
Input Voltage																													
Operating Temperature																													
Number of Operators																													
Resolution (camera)																													
User interface																													
Angular Range																													
Measurement Spectral Range Wavelength																													
Lens to Sample Distance																													
Sample sheet size																													
	<b>Preferred</b>														<b>Engineering Metrics</b>													<b>Customer Perception</b>	
	<b>Customer Weights</b>	Size	Weight	Cost	Light Intensity	Input Voltage	Operating Temperature	Number of Operators	Resolution (camera)	User interface	Angular Range	Measurement Spectral Range Wavelength	Lens to Sample Distance	Sample sheet size	1 <i>Worse</i>	2	3	4	5 <i>Better</i>										
1 Desktop size (fits in overhead compartment)	9	9	1	1				9						1															
2 To be operated by one person	9	1	1					9		1																			
3 Affordable	9	3	6	9					6	1																			
4 Is accurate, precise and consistent	9			9	3		1		9		6	6	6																
5 Gives graphical results to user	9								9																				
6 Minimized power consumption	3				1	9																							
7 Easy to use (high school level operator)	9	1	1					3		9																			
8 Simple user interface	9									9																			
9 Upgradable	9									3																			
10 Easily serviceable	6	6	6																										
11 Easy to load sample sheet	6													6															
12 8.5"x11" standard paper size (sample sheet)	9		3											9															
13 Read anywhere on the sample sheet	6		1											1															
15 Measures in red, green, blue bands (narrow) of light	9			1	6							6																	
16 Robust/durable	9	3	3	3																									
<b>Technical Targets</b>		24" x 14" x 6"	< 30 lbs	< \$1500	> 300 lumens	110V AC	Room Temperature, ~60-80°F	1 person	> 640 x 480	"Push button"	-80 to 80 degrees	Visible, 400 to 700 nm	6-12 in	8.5" x 11" paper															
<b>Technical Benchmarking</b>	<i>Better</i>	5	4	3	2	1	<i>Worse</i>																						
	<b>Raw score</b>	189	177	207	84	27	9	108	135	288	54	108	54	132															
	<b>Relative Weight</b>	12%	11%	13%	5%	2%	1%	7%	9%	18%	3%	7%	3%	8%															