



*Motor SB71*

*Combined windings*

**Comparative measurements**





# *Motor SB71*

## *Combined windings*

### **Description**

We tested 3 motors

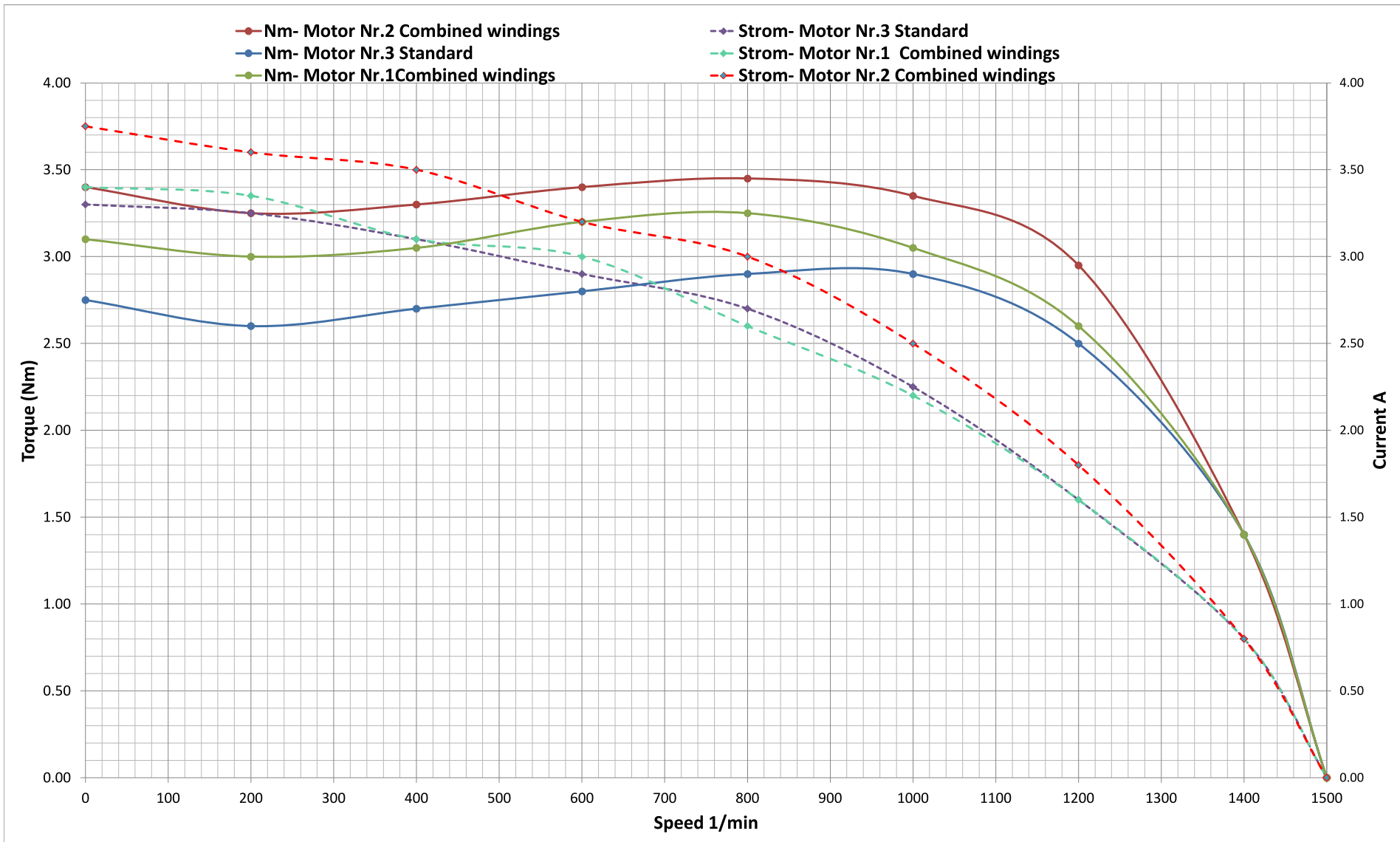
Motor 1 - combined windings  
0,2 kW 4 pole 230V/50Hz

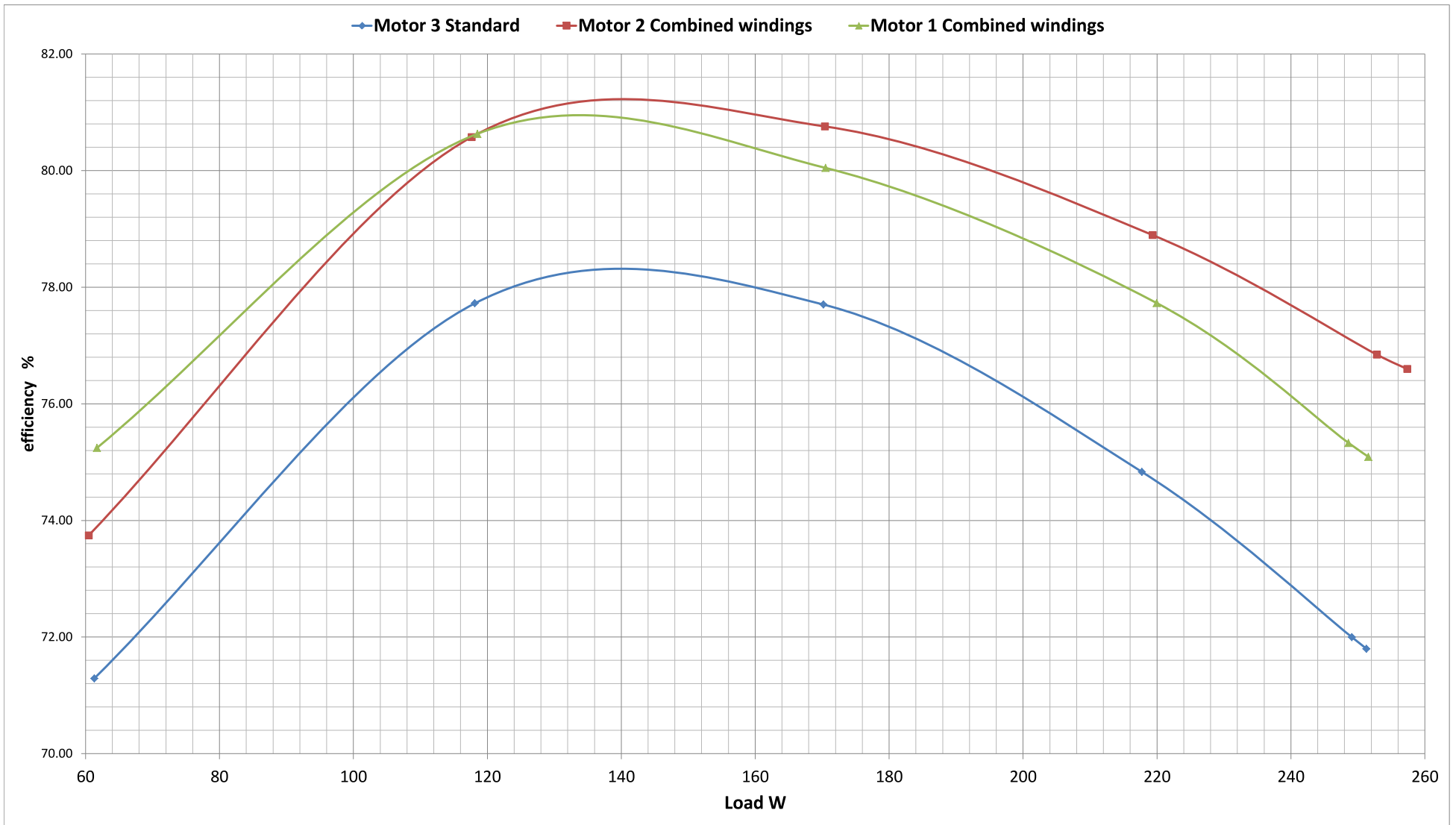
Motor 2 - combined windings  
0,25 kW 4 pole 230V/50Hz

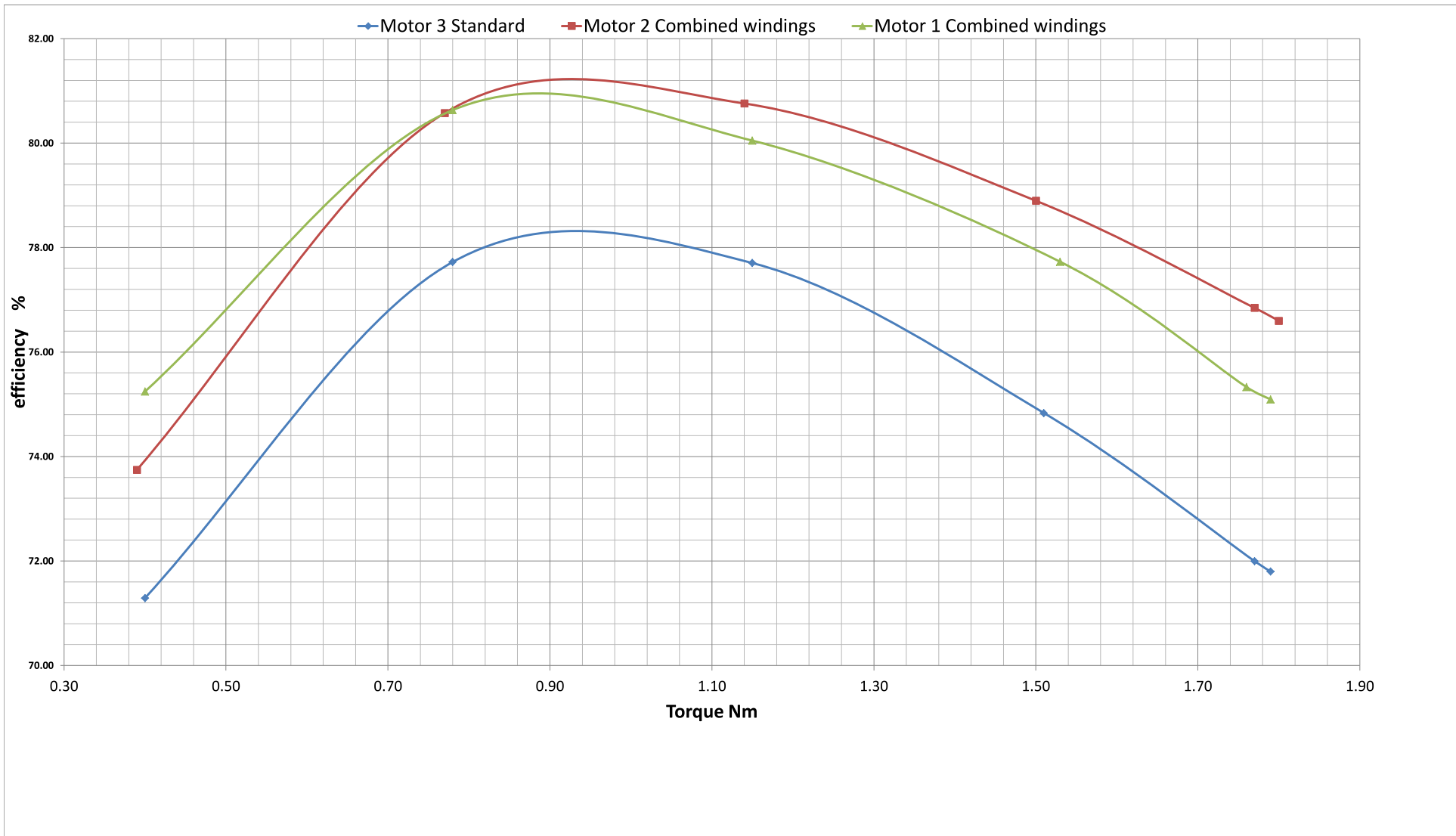
Motor 3 - standard windings  
0,2 kW 4 pole 230/400V /50Hz.  
This engine was used for comparison  
with the results of motor 1 and 2

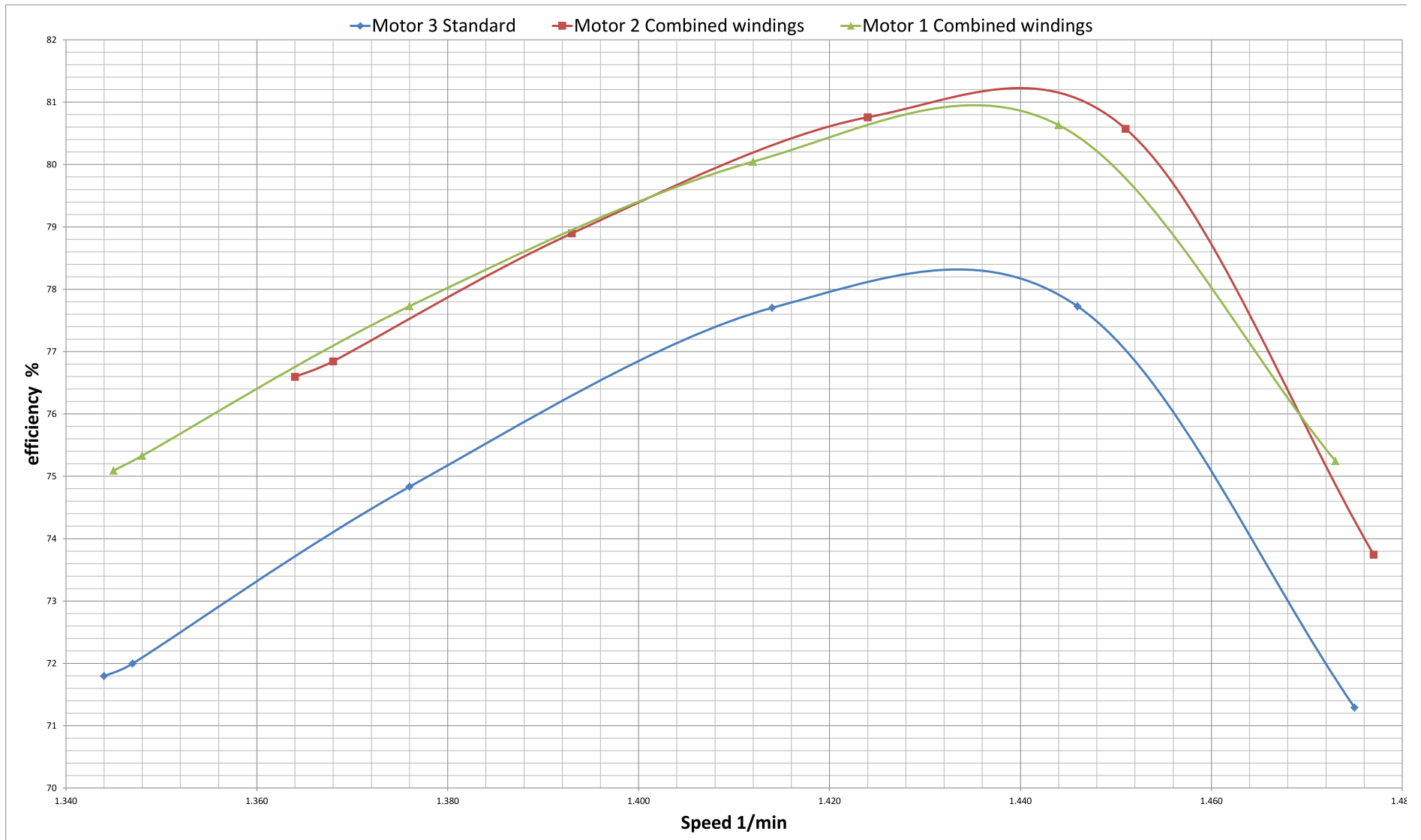
The purpose of the test was to show whether combined windings would be able to reduce the currently occurring surface temperatures of our SB motors (motors without fan blades - smooth surface).

The starting and breakdown torques were to exceed the ones of reference motor 3, with the current consumption remaining the same.











## Executive Summary

## Motor SB71 Combined windings

		Motor 3 reference	Motor 1	comparison	Motor 2	comparison
U	V	230	230		230	
f	Hz	50	50		50	
T	Nm	1,15	1,15		1,15	
n	1/min	1414	1412	-2,00	1424	10,00
I	A	0,76	0,75	-0,01	0,77	0,01
cos phi		0,72	0,71	-0,01	0,69	-0,03
sin phi		0,69	0,7	0,01	0,72	0,03
P1	W	219	213		211	
P2	W	170,2	170,5		170,4	
ambient temperature	°C	24,9	24		24,5	
heating of	K	26,5	20,3	-6,20	18,8	-7,70
iron temperature	°C	54	48,6	-5,40	49,6	-4,40
winding temperature	°C	51,38	44,27	-7,11	43,3	-8,08
efficiency	%	76,16	78,38	2,22	78,76	2,60



# Motor SB71

## Combined windings

### Executive Summary

		Motor 3 reference	Motor 1	comparison		Motor 2	comparison	
<b>Torque</b>								
Start	Nm	2,75	3,10	0,40	13%	3,40	0,65	24%
Torque at 200 1/min	Nm	2,60	3,00	0,40	15%	3,25	0,65	25%
Torque at 400 1/min	Nm	2,70	3,05	0,35	13%	3,30	0,60	22%
Torque at 600 1/min	Nm	2,80	3,20	0,40	14%	3,40	0,60	21%
Torque at 800 1/min	Nm	2,90	3,25	0,35	12%	3,45	0,55	19%
Torque at 1000 1/min	Nm	2,90	3,05	0,15	5%	3,35	0,45	16%
Torque at 1200 1/min	Nm	2,50	2,60	0,10	4%	2,95	0,45	18%
Torque at 1400 1/min	Nm	1,40	1,40	0,00	0%	1,40	0,00	0%
<b>Current</b>								
Start	A	3,30	3,40	0,10		3,75	0,45	
Current at 200 1/min	A	3,25	3,35	0,10		3,60	0,35	
Current at 400 1/min	A	3,10	3,10	0,00		3,50	0,40	
Current at 600 1/min	A	2,90	3,00	0,10		3,20	0,30	
Current at 800 1/min	A	2,70	2,60	-0,10		3,00	0,30	
Current at 1000 1/min	A	2,25	2,20	-0,05		2,50	0,25	
Current at 1200 1/min	A	1,60	1,60	0,00		1,80	0,20	
Current at 1400 1/min	A	0,80	0,80	0,00		0,80	0,00	