

NEBNext[®] Ultra[™] II Reagents & Kits

THE CORE OF YOUR NGS LIBRARY PREP



NEW ENGLAND
BioLabs[®]

be INSPIRED
drive DISCOVERY
stay GENUINE

The heart of the matter

As sequencing technologies improve and applications expand, the need for compatibility with ever-decreasing input amounts and sub-optimal sample quality grows. Scientists must balance reliability and performance with faster turnaround, higher throughput and automation compatibility.

The NEBNext Ultra II workflow lies at the heart of NEB's portfolio for next generation sequencing library preparation. NEBNext Ultra II kits and modules for Illumina® are the perfect combination of reagents, optimized formulations and simplified workflows, enabling you to create DNA or RNA libraries of highest quality and yield, even when starting from extremely low input amounts.

The Ultra II workflow is central to many of our NEBNext solutions, including:

- Ultra II DNA & FS DNA Library Prep
- Enzymatic Methyl-seq
- Ultra II RNA & Directional RNA Library Prep
- Single Cell/Low Input RNA Library Prep
- Module products for each step in the workflow

The NEBNext Ultra II Workflow:



Advantages of the Ultra II Workflow:

- Learn one central workflow and apply it to a suite of different applications
- Save time with streamlined, modular workflows, reduced hands-on time, and automation compatibility
- Benefit from low input amount requirements, fewer PCR cycles and uniform GC-coverage in all applications

What users are saying:

“ We’ve been testing EM-seq on a variety of inputs, platforms, and samples, and it shows more even coverage across CpG islands, the whole genome, and also greater detection of CpG sites across the genome vs. WGBS. ”

– Christopher Mason,
Weill Cornell Medical School
New York

“ NEB is currently the only company, which is offering really “automation friendly” library preparation kits. The volumes of components are calculated to cover for unavoidable deadvolumes, reactant volumes are in range of most automated platforms. The stability of the NEBNext chemistry allows a broad range of automation strategies ”

– Dr. Jürgen Zimmermann,
Senior Engineer - Automation
GeneCore EMBL Heidelberg, Germany

The NEBNext Ultra II Workflow

The Ultra II workflow is available in a convenient kit format, or as separate modules – it is easily scalable and automated on a range of liquid handling instruments. The NEBNext Ultra II workflow has been cited in thousands of publications, as well as a growing number of preprints and protocols related to COVID-19. Citation information and extensive performance data for each product is available on www.neb.com.

Choose the convenient

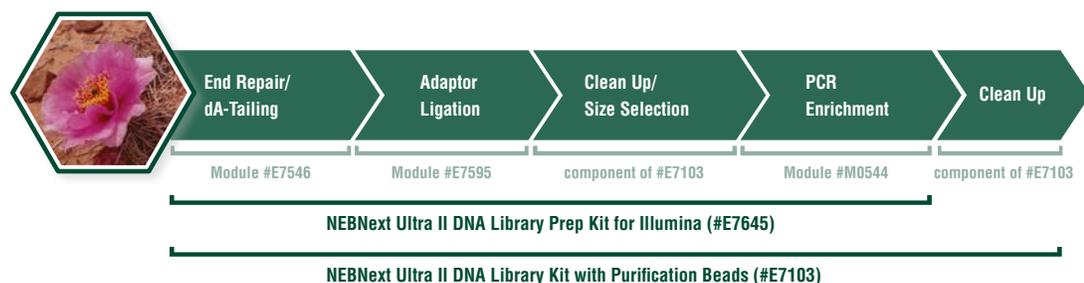
NEBNext Ultra II DNA Library Prep Kit for:

- Whole Genome Sequencing
- Standard & Low Input Sequencing
- ChIP-seq, NICE-seq, Cut&Run-seq
- Exome Capture
- Targeted Sequencing
- FFPE Material
- cfDNA
- Infectious disease / surveillance sequencing (e.g. SARS-CoV-2)

Features

- Highest library yields and quality
- Fewer PCR cycles
- Broad input range (500 pg to 1 µg sheared DNA)
- Less than 15 minutes of hands-on time
- Workflow complete in ~2:30 – 3:00 hours

The Ultra II DNA Workflow is Available in Convenient Kit Formats or Modules:



- Hands on time: <15 minutes
- Total time: ~2:30 – 3:00 hrs

The Ultra II DNA Workflow is the Core of:

Enzymatic DNA Fragmentation Library Prep



You'll be thrilled to pieces.

Directional & Non-directional RNA-seq



Even more *from* less – now for RNA.

Enzymatic Methyl-seq (bisulfite-free)



Heads up!

Single Cell/ Low Input RNA Library Prep



How low can you go?

NEBNext Ultra II FS DNA Library Prep Workflow:



Ultra II DNA FS input amounts:
100 pg – 0.5 µg unsheared DNA

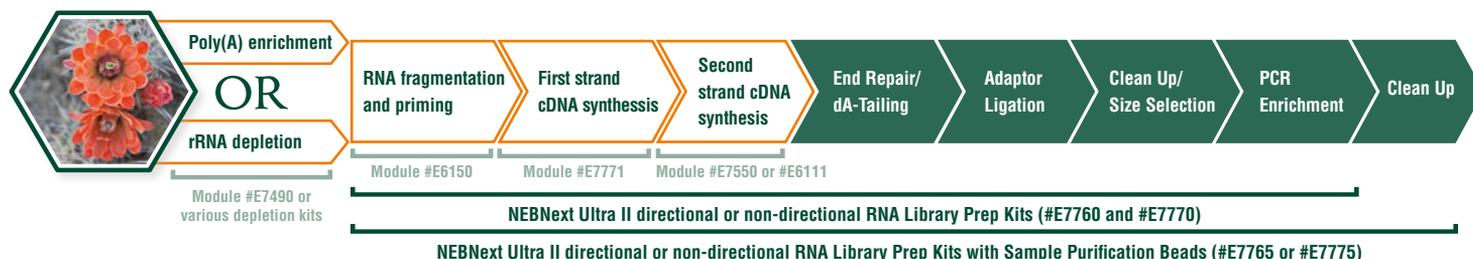


- Hands on time: <15 minutes
- Total time: ~ 2:30 hrs

Also being used in SARS-CoV-2 surveillance sequencing

For more information, visit www.neb.com/ARTIC

NEBNext Ultra II Directional RNA or Non-directional RNA Workflow:



Ultra II RNA input amounts:
5 ng – 1 µg total RNA (rRNA depletion)
10 ng – 1 µg total RNA (poly(A) mRNA)



- Hands on time: <30 minutes
- Total time: ~ 5:30 – 6:30 hrs

NEBNext Enzymatic Methyl-seq Workflow:

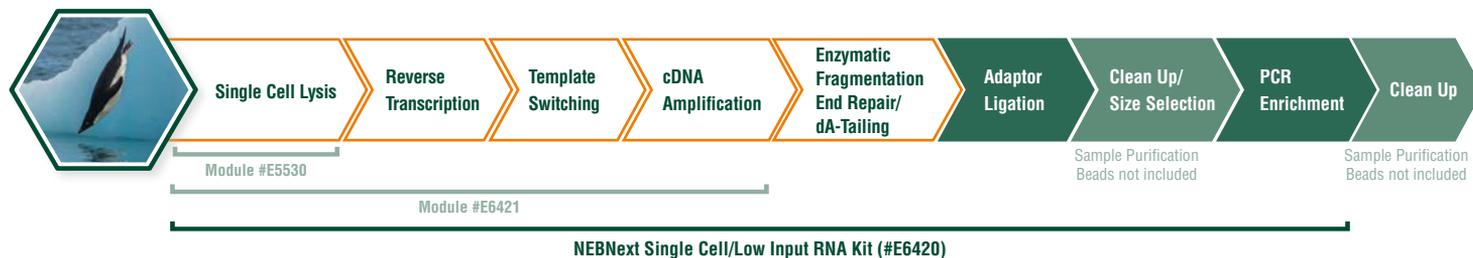


EM-seq input amounts:
10 ng – 200 ng



- Total time: 6 hrs – 7 hrs

NEBNext Single Cell/Low Input RNA Workflow:



Single Cell/Low Input RNA input amounts:
2 pg – 200 ng total RNA



- Hands on time: <30 minutes
- Total time: 6 hrs – 7 hrs

Ordering Information

| DNA KITS | | NEB # | SIZE |
|----------------------------|------------------------------------------------------------------------------------------|------------|-------------------|
| DNA | NEBNext Ultra II FS DNA Library Prep Kit for Illumina | E7805S/L | 24/96 reactions |
| | NEBNext Ultra II FS DNA Library Prep with Sample Purification Beads | E6177S/L | 24/96 reactions |
| | NEBNext Ultra II DNA Library Prep Kit for Illumina | E7645S/L | 24/96 reactions |
| | NEBNext Ultra II DNA Library Prep with Sample Purification Beads | E7103S/L | 24/96 reactions |
| | NEBNext Enzymatic Methyl-seq Kit | E7120S/L | 24/96 reactions |
| RNA KITS | | NEB # | SIZE |
| Directional RNA | NEBNext Ultra II Directional RNA Library Prep Kit for Illumina | E7760S/L | 24/96 reactions |
| | NEBNext Ultra II Directional RNA Library Prep with Sample Purification Beads | E7765S/L | 24/96 reactions |
| Non-directional RNA | NEBNext Ultra II RNA Library Prep Kit for Illumina | E7770S/L | 24/96 reactions |
| | NEBNext Ultra II RNA Library Prep with Sample Purification Beads | E7775S/L | 24/96 reactions |
| Single Cell | NEBNext Single Cell/Low Input RNA Library Prep Kit for Illumina | E6420S/L | 24/96 reactions |
| MODULES & ENZYMES | | NEB # | SIZE |
| DNA | NEBNext Enzymatic Methyl-seq Conversion Module | E7125S/L | 24/96 reactions |
| | NEBNext Ultra II End Repair/dA-Tailing Module | E7546S/L | 24/96 reactions |
| | NEBNext Ultra II Ligation Module | E7595S/L | 24/96 reactions |
| | NEBNext Ultra II FS DNA Module | E7810S/L | 24/96 reactions |
| RNA | NEBNext Single Cell Lysis Module | E5530S | 96 reactions |
| | NEBNext Magnesium RNA Fragmentation Module | E6150S | 200 reactions |
| | NEBNext Ultra II RNA First Strand Synthesis Module | E7771S/L | 24/96 reactions |
| | NEBNext Ultra II Directional RNA Second Strand Synthesis Module | E7550S/L | 24/96 reactions |
| | NEBNext Ultra II Non-directional RNA Second Strand Synthesis Module | E6111S/L | 20/100 reactions |
| Amplification | NEBNext Single Cell/Low Input cDNA Synthesis and Amplification Module | E6421S/L | 24/96 reactions |
| | NEBNext Ultra II Q5 Master Mix | M0544S/L | 50/250 reactions |
| | NEBNext Q5U Master Mix | M0597S/L | 50/250 reactions |
| COMPANION PRODUCTS | | NEB # | SIZE |
| Oligos | NEBNext Multiplex Oligos for Illumina (96 Unique Dual Index Primer Pairs) | E6440S/L | 96/384 reactions |
| | NEBNext Multiplex Oligos for Illumina (96 Unique Dual Index Primer Pairs Set 2) | E6442S/L | 96/384 reactions |
| | NEBNext Multiplex Oligos for Enzymatic Methyl-seq (Unique Dual Index Primer Pairs) | E7140S/L | 24/96 reactions |
| | NEBNext Multiplex Oligos for Illumina (Dual Index Primers Set 1) | E7600S | 96 reactions |
| | NEBNext Multiplex Oligos for Illumina (Dual Index Primers Set 2) | E7780S | 96 reactions |
| | NEBNext Multiplex Oligos for Illumina (Index Primers Set 1) | E7335S/L | 24/96 reactions |
| | NEBNext Multiplex Oligos for Illumina (Index Primers Set 2) | E7500S/L | 24/96 reactions |
| | NEBNext Multiplex Oligos for Illumina (Index Primers Set 3) | E7710S/L | 24/96 reactions |
| | NEBNext Multiplex Oligos for Illumina (Index Primers Set 4) | E7730S/L | 24/96 reactions |
| | NEBNext Multiplex Oligos for Illumina (96 Index Primers) | E6609S/L | 96/384 reactions |
| RNA Depletion | NEBNext rRNA Depletion Kit v2 (Human/Mouse/Rat) | E7400S/L/X | 6/24/96 reactions |
| | NEBNext rRNA Depletion Kit v2 (Human/Mouse/Rat) with RNA Sample Purification Beads | E7405S/L/X | 6/24/96 reactions |
| | NEBNext Globin & rRNA Depletion Kit (Human/Mouse/Rat) | E7750S/L/X | 6/24/96 reactions |
| | NEBNext Globin & rRNA Depletion Kit (Human/Mouse/Rat) with RNA Sample Purification Beads | E7755S/L/X | 6/24/96 reactions |
| | NEBNext rRNA Depletion Kit (Bacteria) | E7850S/L/X | 6/24/96 reactions |
| | NEBNext rRNA Depletion Kit (Bacteria) with RNA Sample Purification Beads | E7860S/L/X | 6/24/96 reactions |

GERMANY & AUSTRIA

New England Biolabs GmbH
Brüningstr. 50, Geb B852
65926 Frankfurt/Main, Germany
Tel: +49/(0)69/305-23140
Fax: +49/(0)69/305-23149

Free Call: 0800/246 5227 (Germany)
Free Call: 00800/246 52277 (Austria)
info.de@neb.com

www.neb-online.de

HEADQUARTERS:

USA

New England Biolabs, Inc.
Telephone: (978) 927-5054

Toll Free (USA Orders): 1-800-632-5227

Toll Free (USA Tech): 1-800-632-7799

Fax: (978) 921-1350

info@neb.com

www.neb.com

www.neb.com

FRANCE

New England Biolabs France SAS
Genopole Campus 1, Bâtiment 6
5 rue Henri Desbrüères
91030 Evry cedex, France
Tel.: 0800 100 632 (Customer Service)

Tel.: 0800 100 633 (Technical Service)
FAX.: 0800 100 610
info.fr@neb.com

www.neb-online.fr



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Featured Tools

ATCG

NEBNext Selector

For help with choosing the best reagents for your next generation sequencing sample preparation, try our NEBNext selector at NEBNextselector.neb.com.



Read Coverage Calculator

For help with calculation of values associated with read coverage in NGS protocols, try our Read Coverage Calculator at Readcoveragecalculator.neb.com.

Your local NEB distributor:

BeNeLux:
BIOKÉ
Tel: (+31) 71 720 0220
(BE: 0800 - 71640)
info@bioke.com
www.bioke.com

BULGARIA
ELTA 90M Ltd.
Tel: (+359) 2 983 96 49
Fax: (+359) 2983 2211, 9274 232
office@elta90.eu
www.elta90.com

CROATIA:
Diagnostica Skalpel d.o.o.
Tel: (+385) 1 377 8484
Fax: (+385) 1 377 8585
skalpel@skalpel.hr
www.skalpel.hr

CZECH REPUBLIC:
BioTech a.s.
Tel: (+420) 2727 017 39
info@ibiotech.cz
www.ibiotech.cz

DENMARK:
BioNordika Denmark A/S
Tel: (+45) 39 56 20 00
Fax: (+45) 39 56 19 42
info@bionordika.dk
www.bionordika.dk

FINLAND:
BioNordika Oy
Tel: (+358) 207 410 270
info@bionordika.fi
www.bionordika.fi

GREECE:
BIOLINE SCIENTIFIC
Tel: (+30) 210 522 6547
Fax: (+30) 210 524 4744
info@bioline.gr
www.bioline.gr

HUNGARY:
Kvalitex Kft.
Tel: (+361) 340 4700
Fax: (+361) 339 8274
info@kvalitex.hu
www.kvalitex.hu

ITALY:
Euroclone S.p.A.
Tel: (+39) 02 38 1951
info@euroclone.it
www.euroclonegroup.it

ISRAEL:
Ornat BioChemicals & Lab Equipment
Tel: (+972) 8 947 7077
Fax: (+972) 8 936 3034
ornatbio@ornat.co.il
www.ornat.co.il

LITHUANIA:
Nanodiagnostika, Ltd.
Tel (+370) 525 052 44
lina@nanodiagnostika.lt
www.nanodiagnostika.lt

Norway:
BioNordika AS
Tel (+47) 2303 5800
info@bionordika.no
www.bionordika.no

POLAND:
Lab-JOT Ltd. Sp.z o.o. Sp.k.
Tel: (+48) 2233 598 84
Fax: (+48) 2233 598 19
biuro@labjot.com
www.labjot.com

PORTUGAL:
Werfen
Tel: (+351) 214 247 300
dac-pt@werfen.com
www.pt.werfen.com

ROMANIA:
BioZyme
Tel: (+40) 264 523 281
contact@biozyme.ro
www.biozyme.ro

RUSSIA and CIS:
SkyGen LLC
Tel: (+88) 0033 312 26
info@skygen.com
www.skygen.com

SERBIA:
Alfa Genetics d.o.o.
Tel: (+38) 1011 2084 252
office@alfagenetics.rs
www.alfagenetics.rs

SPAIN:
Werfen
Tel: (+34) 900 822 290
customerservice-es@werfen.com
www.es.werfen.com

SLOVAK REPUBLIC
BioTech s.r.o.
Tel: (+421) 254 7744 88
Fax: (+421) 232 2010 48
info@ibiotech.sk
www.ibiotech.sk

SLOVENIA:
Mikro+Polo d.o.o.
Tel: (+386) 2614 33 00
Fax: (+386) 2614 33 20
podpora@mikro-polo.si
www.mikro-polo.si

South Africa:
Inqaba Biotechnical Industries (Pty) Ltd
Tel: (+27) 1234 358 29
info@inqababiotec.co.za
www.inqababiotec.co.za

SWEDEN, ESTONIA, LATVIA, LITHUANIA:
BioNordika Sweden AB
Tel: (+46) 830 60 10
info@bionordika.se
www.bionordika.se

SWITZERLAND:
BioConcept Ltd.
Tel: (+41) 6148 680 80
Fax: (+41) 6148 680 00
info@bioconcept.ch
www.bioconcept.ch

TURKEY:
EKA BIOLAB TEKNOLOJİ
Tel. (+90) 312 248 13 24
Email: info@ekabiolab.com
www.ekabiolab.com

Distributors

For a complete list of all NEB subsidiaries and distributors, please go to:

www.neb.com/international-support

The heart of the matter.

NEBNext[®] Ultra[™] II DNA Sample Prep Solutions – now featuring PCR-free workflows

As sequencing technologies continue to improve and applications expand, the need for compatibility with ever-increasing input amounts and sub-optimal sample quality grows. Reliability and high performance are critical, along with faster turnaround, higher throughput, and automation compatibility.

NEBNext's line of Ultra II DNA library prep reagents has expanded to include PCR-free workflows, powering high performance without the need for amplification. Be eliminating the risk of PCR bias, libraries are a clearer reflection of biology.

The NEBNext Ultra II workflow lies at the heart of NEB's portfolio for next generation sequencing library preparation, with kits and modules for optimal flexibility. You can be assured your DNA libraries will be of the highest quality and yield, even when starting from extremely low input amounts.

Use the selection chart below to determine which NEBNext Ultra II products best suit your needs.

| | ULTRA II DNA LIBRARY PREP | ULTRA II FS DNA LIBRARY PREP |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| FEATURES | Unprecedented performance, enabling lower inputs and fewer PCR cycles | Perform fragmentation, end repair, and dA-tailing with a single enzyme mix |
| ULTRA II INPUT AMOUNTS | 500 pg – 1 µg of sheared DNA | 100 pg – 500 ng of intact DNA |
| Available with or without beads? | <ul style="list-style-type: none"> • With beads: NEB #E7103 • Without beads: NEB #E7645 | <ul style="list-style-type: none"> • With beads: NEB #E7435 • Without beads: NEB #E7805 |
| Modules available? | <ul style="list-style-type: none"> • Ultra II End Repair/dA-tailing Module (NEB #E7546) • Ultra II Ligation Module (NEB #E7595) | <ul style="list-style-type: none"> • Ultra II FS DNA Module (NEB #E7810) |
| ULTRA II PCR-FREE INPUT AMOUNTS | 250 ng – 1,000 ng of sheared DNA | 50 ng – 500 ng of intact DNA |
| Available with or without beads? | <ul style="list-style-type: none"> • With beads: NEB #E7415 • Without beads: NEB #E7410 | <ul style="list-style-type: none"> • With beads: NEB #E7435 • Without beads: NEB #E7430 |
| Modules available? | <ul style="list-style-type: none"> • Ultra II End Repair/dA-tailing Module (NEB #E7546) • Ultra II Ligation Module (NEB #E7595) | <ul style="list-style-type: none"> • Ultra II FS DNA Module (NEB #E7810) |
| COMPATIBLE WITH FFPE DNA? | Yes – for improved performance, consider the NEBNext FFPE DNA Repair Mix (NEB #M6630) | Yes – for improved performance, consider the NEBNext FFPE DNA Repair Mix (NEB #M6630) |
| COMPATIBLE WITH METHYLOME ANALYSIS? | Yes – Methylome analysis is supported; however, we recommend NEBNext EM-seq [™] (NEB #E7120) | No – not compatible due to potential for loss of methyl marks |
| COMPATIBLE WITH OXFORD NANOPORE TECHNOLOGIES? | Yes. We recommend the NEBNext Companion Module for Oxford Nanopore Technologies [®] Ligation Sequencing (NEB #E7180). | |

Note: NEBNext Multiplex Oligos are available separately. Visit www.neb.com/oligos for options.



NEBNext Ultra II DNA Sample Prep Solutions – now featuring PCR-free workflows



Ordering Information

| PRODUCT | NEB # | SIZE | PRICE |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------|-----------------|
| NEBNext Ultra™ II DNA Library Prep Kit for Illumina® | E7645S/L | 24/96 reactions | 545 € / 2.085 € |
| NEBNext Ultra II DNA Library Prep with Sample Purification Beads | E7103S/L | 24/96 reactions | 626 € / 2.394 € |
| NEBNext Ultra II FS DNA Library Prep Kit for Illumina | E7805S/L | 24/96 reactions | 665 € / 2.526 € |
| NEBNext Ultra II FS DNA PCR-free Library Prep with Sample Purification Beads | E7435S/L | 24/96 reactions | 693 € / 2.620 € |
| NEBNext Ultra II End Repair/dA-Tailing Module | E7546S/L | 24/96 reactions | 262 € / 835 € |
| NEBNext Ultra II Ligation Module | E7595S/L | 24/96 reactions | 395 € / 1.270 € |
| NEBNext Ultra II DNA PCR-free Library Prep Kit for Illumina | E7410S/L | 24/96 reactions | 518 € / 1.980 € |
| NEBNext Ultra II DNA PCR-free Library Prep with Sample Purification Beads | E7415S/L | 24/96 reactions | 594 € / 2.253 € |
| NEBNext Ultra II FS DNA PCR-free Library Prep Kit for Illumina | E7430S/L | 24/96 reactions | 632 € / 2.399 € |
| NEBNext Ultra II FS DNA PCR-free Library Prep with Sample Purification Beads | E7435S/L | 24/96 reactions | 693 € / 2.620 € |
| NEBNext Ultra II FS DNA Module | E7810S/L | 24/96 reactions | 290 € / 1.036 € |
| NEBNext FFPE DNA Repair Mix | M6630S/L | 24/96 reactions | 173 € / 604 € |
| NEBNext Enzymatic Methyl-seq Kit | E7120S/L | 24/96 reactions | 895 € / 3.360 € |
| NEBNext Enzymatic Methyl-seq Conversion Module | E7125S/L | 24/96 reactions | 185 € / 675 € |
| NEBNext Companion Module for Oxford Nanopore Technologies® Ligation Sequencing | E7180S | 24 reactions | 920 € |
| NEBNext Oligos (including unique dual index, dual and single index primers, as well as unique dual index UMI adaptors) (NEB #E6440, #E6442, #E6444, #E6446, #E6609, #E7140, #E7335, #E7395, #E7500, #E7535, #E7600, #E7710, #E7730, #E7780) | N/A | N/A | N/A |

For more information on our NEBNext portfolio for DNA and RNA library prep, and to request a sample, visit [NEBNext.com](https://www.neb.com)

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www.neb-online.de

New England Biolabs GmbH, Brünningstr. 50, Geb. B852, 65926 Frankfurt/Main, Germany

Tel: +49/(0)69/305-23140 Toll Free: (Germany) 0800/246-5227 Toll Free: (Austria) 00800/246-52277 Fax: +49/(0)69/305-23149 e-mail: info.de@neb.com